CISCO SYSTEMS

Cisco ATM Services (AXSM) Configuration Guide and Command Reference for MGX Switches

Release 5.2
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About This Guide

Welcome to the configuration and command line interface (CLI) documentation for the AXSM card family on the Cisco MGX wide area routing switches, Release 5.2.

This preface discusses:

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Objectives

This publication provides instructions for using the CLI commands for the Cisco MGX 8850, MGX 8950, MGX 8830, and MGX 8880.

Audience

The Command Line Interface (CLI) lets you control the network from a level somewhat below that provided by Cisco WAN Manager. This document helps network designers and operators to set up, manage, and troubleshoot networks.

Organization

The major sections of this document are as follows:

- Chapter 1, "Introduction," introduces the AXSM cards.

- Chapter 2, "Preparing AXSM Lines for Communication," describes how to prepare AXSM lines for provisioning.
- Chapter 3, "Provisioning ATM Services," describes how to provision ATM connections between the AXSM cards described in this guide and between these AXSM cards and other types of cards.
- Chapter 4, "AXSM Card Management," describes card management tasks you might want to do after provisioning is complete.
- Chapter 5, "AXSM Command Reference," describes the command-line interface (CLI) commands that you can use to configure, provision, and manage the AXSM cards.

Conventions

This publication uses the conventions listed in the following paragraphs.

- Command descriptions use these conventions:
- Commands and keywords are in boldface.
- Arguments for which you supply values are in italics.
- Required command arguments are inside angle brackets (< >).
- Optional command arguments are in square brackets ([ ]).
- Alternative keywords are separated by vertical bars (|).

Examples use these conventions:

- Terminal sessions and information the system displays are in screen font.
- Information you enter is in boldface screen font.
- Nonprinting characters, such as passwords, are in angle brackets (< >).
- Default responses to system prompts are in square brackets ([ ]).

Note Means reader take note. Notes contain helpful suggestions or references to material not covered in the manual.

Caution Means reader be careful. In this situation, you might do something that could result in equipment damage or loss of data.

Tip Means the following information will help you solve a problem. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

Documentation

A *Finding Cisco User Documentation Online* document ships with your product. That guide contains general information about how to locate Cisco MGX, BPX, SES, and CWM documentation online.

Documentation Notes for these Product Releases

This release includes new hardware or features for the following releases:

- Cisco MGX Release 5.2 introduces the Cisco MGX 8850/B multiservice switch
- Cisco MGX Release 5.2, for these multiservice switches:
  - Cisco MGX 8850 (PXM1E)
  - Cisco MGX 8850 (PXM45)
  - Cisco MGX 8950
  - Cisco MGX 8830
- Cisco MGX Release 1.3, for these multiservice switches:
  - Cisco MGX 8850 (PXM1)
  - Cisco MGX 8230
  - Cisco MGX 8250
- Cisco MGX Release 5.2, for the Route Processor Modules (RPM-XF and RPM-PR)
- Cisco WAN Manager Release 15.1. CWM Release 15 introduced a helpful new documentation feature: web-based *online help*. To invoke online help, press **F1** on a PC, press the **Help** key on a UNIX workstation, or select **Help** from the main or popup menu. Cisco WAN Manager online help has been updated for Release 15.1.

Other components of multiservice WAN products, such as the Service Expansion Shelf (SES) and WAN switching software have no new features for this release.

Related Documentation

This section describes the technical manuals and release notes that support this release of Cisco Multiservice Switch products.

Technical Manual Order of Use

Use the technical manuals listed here in the following order:

Step 1 Refer to the documents that ship with your product. Observe all safety precautions.

- *Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES)*—This document familiarizes you with safety precautions for your product.
- *Finding Cisco User Documentation Online*—This document explains how to find documentation for MGX, BPX, and SES multiservice switches and media gateways as well as CWM network management software. These documents are available only online.
- *Installation Warning Card*—This document provides precautions about installing your cards. It explains such subjects as removing the shipping tab and inserting cards properly into the correct slots.

Step 2 Refer to the release notes for your product.

Step 3 If your network uses the CWM network management system, upgrade CWM. (If you are going to install CWM for the first time, do so *after* Step 4.) Upgrade instructions are included in the following documents:

- *Cisco WAN Manager Installation Guide, Release 15.1*
- *Cisco WAN Manager User's Guide, Release 15.1*

Step 4 If your network contains MGX and SES products, refer to this manual for planning information:

- *Cisco PNNI Network Planning Guide for MGX and SES Products*

Step 5 Refer to these manuals for information about installing cards and cables in the MGX chassis:

- *Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.2* for installing cards and cables in these chassis.
- *Cisco MGX 8xxx Edge Concentrator Installation and Configuration Guide* for installing cards and cables in the Cisco MGX 8230, Cisco MGX 8250, or Cisco MGX 8850 (PXM1) chassis.

Step 6 Refer to the manuals that help you configure your MGX switch and processor cards:

- *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2* for these chassis.
- *Cisco MGX 8xxx Edge Concentrator Installation and Configuration Guide* for the Cisco MGX 8230, Cisco MGX 8250, or Cisco MGX 8850 (PXM1) chassis.

Step 7 Refer to the manual that supports the additional cards you intend to install in your switch. For example:

- The services books can help you establish ATM, Frame Relay, or circuit emulation services on your switch.
- The VISM book can help you set up your switch as a voice gateway, and the RPM book can help you implement IP on the switch.

Step 8 Additional books, such as command reference guides and error message books, can help with the daily operation and maintenance of your switch.

Note Manual titles may be different for earlier software releases. The titles shown in Table 1 are for the September 2005 release.

Technical Manual Titles and Descriptions

Table 1 lists the technical manuals and release notes that support the September 2005 multiservice switch product releases. Books and release notes in Table 1 are listed in order of use and include information about which multiservice switch or media gateway the document supports.

The books for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches were not updated for the September 2005 release, therefore, some information about configuring and using the new MPSM-8-T1E1 card in these switches is included in the following books:

- *Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*
- *Cisco Frame Relay Services (FRSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*
- *Cisco Circuit Emulation Services (CESM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*

Information about how to install or upgrade to the MPSM-8-T1E1 card in Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches is in the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.12*.

Note Refer to each product's release notes for the latest information on features, bug fixes, and more.

Terms

Two main types of ATM cards are used in MGX switches: AXSM and AUSM. *AXSM* stands for ATM Switching Service Module. *AUSM* stands for ATM UNI (User Network Interface) Service Module.

CWM stands for Cisco WAN Manager, our multiservice switch network management system.

Legacy service module refers to a previously introduced card. For this release, the term is used specifically for the CESM-8-T1E1, FRSM-8-T1E1, and AUSM-8-T1E1 cards, which can now be replaced by the new MPSM-8-T1E1 card.

MPSM stands for Multiprotocol Service Module.

RPM stands for Route Processor Module.

SES stands for Service Expansion Shelf.

VISM stands for Voice Interworking Service Module.

VXSM stands for Voice Switch Service Module.

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (September 2005 Product Releases)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.2	MGX 8850 (PXM1E) Rel. 5.2	MGX 8850 (PXM45) Rel. 5.2	MGX 8950 Rel. 5.2	MGX 8880 Rel. 5.2.
Overview and Safety Documents									
Finding Cisco User Documentation Online DOC-7814807=	x	x	x	x	x	x	x	x	x
Installation Warning Card DOC-7812348=	x	x	x	x	x	x	x	x	x
Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES) DOC-7814790=	x	x	x	x	x	x	x	x	x
Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.0.02 OL-6493-01	—	—	—	—	—	—	—	—	x
Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.2.00 OL-6478-01	—	—	—	—	x	x	x	x	

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (September 2005 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.2	MGX 8850 (PXM1E) Rel. 5.2	MGX 8850 (PXM45) Rel. 5.2	MGX 8950 Rel. 5.2	MGX 8880 Rel. 5.2.
Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.12 OL-4539-01	—	x	x	x	—	—	—	—	—
Release Notes for the Cisco Voice Switch Service Module (VXSM), Release 5.0.70 OL-4627-01	—	—	—	—	—	—	x	—	x
Release Notes for Cisco WAN Manager, Release 15.1.00 OL-6495-01	x	x	x	x	x	x	x	x	x
Release Notes for the Cisco Voice Interworking Service Module (VISM), Release 3.3 OL-5357-01	—	x	x	x	x	x	x	—	x
Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.3(11)T5 for PXM45-based Switches, Release 5.1.20 OL-4536-01	—	—	—	—	x	—	x	x	x
Release Notes for Cisco MGX Route Processor Module (RPM-PR) IOS Release 12.3(11)T5 for MGX Releases 1.3.12 and 5.1.20 OL-4535-01	—	x	x	x	x	x	x	x	x
Cisco MGX 8230 Edge Concentrator Overview, Release 1.1.3[1] DOC-7812899=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3[1] DOC-7811576=	—	—	x	—	—	—	—	—	—
Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3[1] OL-1154-01	—	—	—	x	—	—	—	—	—

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (September 2005 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.2	MGX 8850 (PXM1E) Rel. 5.2	MGX 8850 (PXM45) Rel. 5.2	MGX 8950 Rel. 5.2	MGX 8880 Rel. 5.2.
Hardware Installation Guides									
Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.2 OL-4545-01	—	—	—	—	x	x	x	x	x
Cisco Service Expansion Shelf Hardware Installation Guide, Release 1[1] DOC-786122=	x	—	—	—	—	—	—	—	—
Planning and Configuration Guides									
Cisco PNNI Network Planning Guide for MGX and SES Products OL-3847-01	x	—	—	—	x	x	x	x	x
Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2 OL-6482-01	—	—	—	—	x	x	x	x	x
Cisco WAN Manager Installation Guide, Release 15.1 OL-6259-01	x	x	x	x	x	x	x	x	x
Cisco WAN Manager User's Guide, Release 15.1 OL-6257-01	x	x	x	x	x	x	x	x	x
Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811223=	—	—	—	x	—	—	—	—	—
Cisco SES PNNI Controller Software Configuration Guide, Release 3[1] DOC-7814258=	x	—	—	—	—	—	—	—	—
Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811215=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811217=	—	—	x	—	—	—	—	—	—

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (September 2005 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.2	MGX 8850 (PXM1E) Rel. 5.2	MGX 8850 (PXM45) Rel. 5.2	MGX 8950 Rel. 5.2	MGX 8880 Rel. 5.2.
Service Module Configuration and Reference Guides									
Cisco MGX Route Processor Module (RPM-PR) Installation and Configuration Guide, Release 5.2[1] 78-12510-02	—	x	x	x	—	—	—	—	—
Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 FRSM12 Card, Release 3[1] DOC-7810327=	—	—	—	—	—	—	x	—	—
Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2[2] OL-6479-01	—	[2]	[2]	[2]	x	x	x	—	—
Cisco Frame Relay Services (FRSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2[2] OL-6480-01	—	[2]	[2]	[2]	x	x	x	—	—
Cisco Circuit Emulation Services (CESM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2[2] OL-6481-01	—	[2]	[2]	[2]	x	x	x	—	—
Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 5.2[1] OL-5087-01	—	—	—	—	—	—	x	x	x
Cisco ATM Services (AXSM) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6484-01	—	—	—	—	—	—	x	x	x

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (September 2005 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.2	MGX 8850 (PXM1E) Rel. 5.2	MGX 8850 (PXM45) Rel. 5.2	MGX 8950 Rel. 5.2	MGX 8880 Rel. 5.2.
Cisco ATM and Frame Relay Services (MPSM-T3E3-155 and MPSM-16-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6487-01	—	—	—	—	x	—	x	—	—
Cisco Voice Switch Services (VXSM) Configuration Guide and Command Reference for MGX Switches, Release 5 OL-4625-01	—	—	—	—	—	—	x	—	x
Cisco Voice Interworking Services (VISM) Configuration Guide and Command Reference, Release 3.3 OL-5358-01	—	x	x	x	x	x	x	—	x
Reference Guides									
Cisco MGX 8230 Multiservice Gateway Error Messages, Release 1.1.3[1] DOC-78112113=	—	x	—	—	—	—	—	—	—
Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3[1] DOC-7811211=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3[1] DOC-7811212=	—	—	x	—	—	—	—	—	—
Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3[1] DOC-7811216=	—	—	x	—	—	—	—	—	—
Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3[1] DOC-7811210=	—	x	x	x	—	—	—	—	—

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (September 2005 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.2	MGX 8850 (PXM1E) Rel. 5.2	MGX 8850 (PXM45) Rel. 5.2	MGX 8950 Rel. 5.2	MGX 8880 Rel. 5.2.
Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3[1] DOC-7811240=	—	x	x	x	—	—	—	—	—
Cisco SES PNNI Controller Command Reference, Release 3[1] DOC-7814260=	x	—	—	—	—	—	—	—	—
Cisco MGX 8800/8900 Series Command Reference, Release 5.2 OL-6483-01	—	—	—	—	x	x	x	x	x
Cisco WAN Manager SNMP Service Agent, Release 15.1 OL-6260-01	x	x	x	x	x	x	x	x	x
Cisco WAN Manager Database Interface Guide, Release 15.1 OL-6261-01	x	x	x	x	x	x	x	x	x
Cisco MGX and Service Expansion Shelf Error Messages, Release 5.2 OL-6485-01	x	—	—	—	x	x	x	x	x

1. This document was not updated for the September 2005 release.
2. Some configuration and command information is included in this book for using the multiprotocol service module (MPSM-8-T1E1/MPSM-16-T1E1) in a Cisco MGX 8230, MGX 8250, or MGX 8850 (PXM1) switch.

Note For the September 2005 product release, there are no new features for the Service Expansion Shelf (SES) of the BPX switch and BPX WAN switching software. Therefore, documentation for these items was not updated. Table 1 lists the most recent technical manuals and release notes for these products.

Table 1 also lists the latest documentation available for the Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches. These switches use the PXM1 processor card. Although there are new features in MGX Release 1.3 for these switches, only the release notes were updated. And the following books contain some information about configuring the MPSM-8-T1E1 and MPSM-16-T1E1 cards for use in these switches:

- *Cisco Circuit Emulation Services (CESM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*
- *Cisco Frame Relay Services (FRSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*
- *Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*

Table 2 lists the documents that ship with product.

Table 3 contains alphabetized titles and descriptions of all the manuals and release notes listed in Table 1.

Table 2 Documents that Ship with Multiservice Switch Products

Document Title	Description
Finding Cisco User Documentation Online DOC-7817081=	Describes how to find the manuals and release notes that support multiservice switches and network management products. These documents are available only online. **This guide ships with product.**
Installation Warning Card DOC-7812348=	**Contains precautions that you should take before you insert a card into a slot. This Warning Card ships with product.**
Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES) DOC-7814790=	Provides regulatory compliance information, product warnings, and safety recommendations for all the Cisco MGX multiservice switches: MGX 8230, MGX 8250, MGX 8850 (PXM1), MGX 8850 (PXM45), MGX 8850 (PXM1E), MGX 8830 and MGX 8950. Also provides such information for the MGX 8880 Media Gateway. **This book ships with product.**

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products

Document Title	Description
Cisco ATM and Frame Relay Services (MPSM-T3E3-155 and MPSM-16-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6487-01	Provides software configuration procedures for provisioning ATM and Frame Relay connections on the new MPSM-T3E3-155 multiprotocol service module. Also describes all MPSM-T3E3-155 commands.
Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6479-01	Provides software configuration procedures for provisioning connections and managing the AUSM cards supported in this release. Also describes all AUSM commands. Includes software configuration procedures for provisioning connections and managing the MPSM-8-T1E1 card as an AUSM card replacement.
Cisco ATM Services (AXSM) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-4548-01	Explains how to configure the AXSM cards and provides a command reference that describes the AXSM commands in detail. The AXSM cards covered in this manual are the AXSM-XG, AXSM/A, AXSM/B, AXSM-E, and AXSM-32-T1E1-E.
Cisco Circuit Emulation Services (CESM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6481-01	Provides software configuration procedures for provisioning connections and managing the Circuit Emulation Service Module (CESM) cards supported in this release. Also describes all CESM commands. Includes software configuration procedures for provisioning connections and managing the MPSM-8-T1E1 card as a CESM card replacement.

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco Frame Relay Services (FRSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6480-01	Provides software configuration procedures for provisioning connections and managing the Frame Relay Service Module (FRSM) cards supported in this release. Also describes all FRSM commands. Includes software configuration procedures for provisioning connections and managing the MPSM-8-T1E1 card as an FRSM card replacement.
Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811215=	Provides installation instructions for the Cisco MGX 8230 edge concentrator.
Cisco MGX 8230 Edge Concentrator Overview, Release 1.1.3 DOC-7812899=	Describes the system components and function of the Cisco MGX 8250 edge concentrator.
Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3 DOC-7811211=	Provides detailed information on the general command line interface commands.
Cisco MGX 8230 Multiservice Gateway Error Messages, Release 1.1.3 DOC-78112113=	Provides error message descriptions and recovery procedures.
Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811217=	Provides installation instructions for the Cisco MGX 8250 edge concentrator.
Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3 DOC-7811576=	Describes the system components and function of the Cisco MGX 8250 edge concentrator.
Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3 DOC-7811212=	Provides detailed information on the general command line interface commands.
Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3 DOC-7811216=	Provides error message descriptions and recovery procedures.
Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3 DOC-7811210=	Provides detailed information on the general command line for the Cisco MGX 8850 (PXM1), Cisco MGX 8250, and Cisco MGX 8230 edge concentrators.
Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3 DOC-7811240=	Provides error message descriptions and recovery procedures for Cisco MGX 8850 (PXM1), Cisco MGX 8250, and Cisco MGX 8230 edge concentrators.

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.2 OL-4545-01	Describes how to install the Cisco MGX 8950, the Cisco MGX 8850 (PXM1E/PXM45), the Cisco MGX 8850/B (PXM1E/PXM45), and the Cisco MGX 8830 switches. Also describes how to install the MGX 8880 Media Gateway. This document explains what each switch does and covers site preparation, grounding, safety, card installation, and cabling. The Cisco MGX 8850 switch uses either a PXM45 or a PXM1E controller card and provides support for both serial bus-based and cell bus-based service modules. The Cisco MGX 8830 switch uses a PXM1E controller card and supports cell bus-based service modules. The Cisco MGX 8950 supports only serial bus-based service modules. The Cisco MGX 8880 uses a PXM45/C controller card, and supports only serial bus-based service modules. *This hardware installation guide replaces all previous hardware guides for these switches.*
Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2 OL-6482-01	Describes how to configure the Cisco MGX 8880 Media Gateway. Also describes how to configure Cisco MGX 8850 (PXM1E), Cisco MGX 8850 (PXM45), the Cisco MGX 8850/B (PXM1E/PXM45), and Cisco MGX 8830 switches to operate as ATM edge switches and the Cisco MGX 8950 switch to operate as a core switch. This guide also provides some operation and maintenance procedures.
Cisco MGX 8800/8900 Series Command Reference, Release 5.2 OL-6483-01	Describes the PXM commands that are available in the CLI of the Cisco MGX 8850 (PXM45), Cisco MGX 8850 (PXM1E), Cisco MGX 8950, and Cisco MGX 8830 switches. Also describes the PXM commands that are available in the CLI of the Cisco MGX 8880 Media Gateway.
Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811223=	Provides installation instructions for the Cisco MGX 8850 (PXM1) edge concentrator.
Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3 OL-1154-01	Describes the system components and function of the Cisco MGX 8850 (PXM1) edge concentrator.
Cisco MGX and Service Expansion Shelf Error Messages, Release 5.2 OL-6485-01	Provides error message descriptions and recovery procedures.
Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 5.2 OL-6954-01	Describes how to install and configure the Cisco MGX Route Processor Module (RPM-XF) in the Cisco MGX 8850 (PXM45), Cisco MGX 8880 (PXM45), and Cisco MGX 8950 switch. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco MGX Route Processor Module (RPM-PR) Installation and Configuration Guide, Release 5.2 OL-7349-01	Describes how to install and configure the Cisco MGX Route Processor Module (RPM/B or RPM-PR) in the Cisco MGX 8850 (PXM1), the Cisco MGX 8250, and the Cisco MGX 8230 edge concentrators. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.
Cisco PNNI Network Planning Guide for MGX and SES Products OL-3847-01	Provides guidelines for planning a PNNI network that uses Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), Cisco MGX 8950, or Cisco BPX 8600 switches or the MGX 8880 Media Gateway. When connected to a PNNI network, each Cisco BPX 8600 Series switch requires an SES for PNNI route processing.
Cisco Service Expansion Shelf Hardware Installation Guide, Release 1 DOC-786122=	Provides instructions for installing and maintaining an SES controller.
Cisco SES PNNI Controller Command Reference, Release 3 DOC-7814260=	Describes the commands used to configure and operate the SES PNNI controller.
Cisco SES PNNI Controller Software Configuration Guide, Release 3 DOC-7814258=	Describes how to configure, operate, and maintain the SES PNNI controller.
Cisco Voice Interworking Services (VISM) Configuration Guide and Command Reference, Release 3.3 OL-5358-01	Describes how to install and configure the Voice Interworking Service Module (VISM) in the Cisco MGX 8830, Cisco MGX 8850 (PXM45), and Cisco MGX 8850 (PXM1E) multiservice switches. Provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.
Cisco Voice Switch Services (VXSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4625-01	Describes the features and functions of the new Voice Switch Service Module (VXSM) in the Cisco MGX 8880 Media Gateway and in the Cisco MGX8850 (PXM45 and PXM1E) multiservice switches. Also provides configuration procedures, troubleshooting procedures, and Cisco CLI configuration information.
Cisco WAN Manager Database Interface Guide, Release 15.1 OL-6261-01	Provides information about accessing the CWM Informix database that is used to store information about the network elements.
Cisco WAN Manager Installation Guide, Release 15.1 OL-6259-01	Provides procedures for installing Release 15.1 of the CWM network management system.
Cisco WAN Manager SNMP Service Agent, Release 15.1 OL-6260-01	Provides information about the CWM Simple Network Management Protocol service agent, an optional adjunct to CWM that is used for managing Cisco WAN switches through SNMP.

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco WAN Manager User's Guide, Release 15.1 OL-6257-01	Describes how to use the CWM Release 15.1 software, which consists of user applications and tools for network management, connection management, network configuration, statistics collection, and security management. **Note** The CWM interface now has built-in documentation support in the form of online Help. On a PC, press **F1** to access Help; on a UNIX workstation, press the **Help** key. Alternatively, on either system you can select **Help** from the main or popup menu.
Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 FRSM12 Card, Release 3 DOC-7810327=	Describes how to use the high-speed Frame Relay (FRSM-12-T3E3) commands that are available in the CLI of the Cisco MGX 8850 (PXM45) switch.
Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.12 OL-4539-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.2.00 OL-6478-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.0.02 OL-6493-01	Provides new feature and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco MGX Route Processor Module (RPM-PR) IOS Release 12.3(11)T5 for MGX Releases 1.3.12 and 5.1.20 OL-7292-01	Provides upgrade and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.3(11)T5 for PXM45-based Switches, Release 5.1.20 OL-7059-01	Provides upgrade and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco Voice Interworking Service Module (VISM), Release 3.3 OL-5357-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco Voice Switch Service Module (VXSM), Release 5.0.70 OL-7088-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco WAN Manager, Release 15.1.00 OL-6495-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

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Cisco Ordering tool:

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Cisco Marketplace:

http://www.cisco.com/go/marketplace/

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San Jose, CA 95134-9883

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- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
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A current list of security advisories and notices for Cisco products is available at this URL:

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If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

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- Emergencies—security-alert@cisco.com
- Nonemergencies—psirt@cisco.com

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.*x* through 8.*x*.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one that has the most recent creation date in this public key server list:

http://pgp.mit.edu:11371/pks/lookup?search=psirt%40cisco.com&op=index&exact=on

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Note Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support Website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

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- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

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- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

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  http://www.cisco.com/ipj

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

CHAPTER 1

Introduction

On the Cisco MGX 8850, MGX 8950, and MGX 8880 switches, the PXM card is the controller card that controls the other cards on the switch. The other cards on the switch are called service modules. AXSM cards are service modules. AXSM stands for ATM Switching Service Module. The AXSM cards covered in this manual are the AXSM/A, AXSM/B, AXSM-E, AXSM-XG, and AXSM-32-T1E1-E cards.

There are also other types of service module cards for the Cisco MGX 8850, MGX 8950, and MGX 8880 switches, but they are not covered in this manual.

The PXM cards are not covered in this manual. For information about the PXM cards, refer to the following documents:

- *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*
- *Cisco MGX 8800/8900 Series Command Reference, Release 5.2*
- *Cisco PNNI Network Planning Guide for MGX and SES Products*
- *Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.2.00*

This manual provides a software configuration guide that explains how to configure the AXSM cards for production and a command reference, which describes each AXSM command in detail. This manual is divided into three chapters as follows:

- Chapter 1, "Introduction"
- Chapter 2, "Preparing AXSM Lines for Communication"
- Chapter 3, "Provisioning ATM Services"
- Chapter 4, "AXSM Card Management"
- Chapter 5, "AXSM Command Reference"

Changes to this Document Since Release 5.1

Table 1-1 summarizes the changes made to this document since Release 5.1.

Table 1-1 Changes to This Guide Since Release 5.0

Section and Link	Status	Description
AXSM Models, page 1-4	Updated	Added AXSM-8-622-XG.
Channelizing SONET, SDH, and DS3 (T3) Lines into Paths, page 2-17	Updated	Improved channelization procedures.
Managing CLI Sessions, page 4-1	Updated	Updated command list.

Command Line Interface

Each AXSM card has its own command line interface (CLI), which is similar to the CLIs on the PXMs and the other service modules.

The CLI is the application that allows you to enter the commands that configure the card. You log into the CLI using the appropriate user name and password. For detailed information about user names, passwords, and logging into the CLI, see the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Once you have logged into the CLI, you will see a CLI prompt such as the following one:

```
MGX8850.7.PXM.a >
```

To change from the CLI of one card to the CLI of another card, use the change card (**cc**) command. For example:

```
MGX8850.7.PXM.a > cc 1

(session redirected)

MGX8850.1.AXSM.a >
```

CLI Prompt

The format of the CLI prompt is as follows and as described in Table 1-2:

```
Name.Slot Number.Card Type.Card State >
```

For example:

```
MGX8850.1.AXSM.a >
```

Table 1-2 CLI Prompt Descriptions

Format	Name	Slot Number	Card Type	Card State
Example	MGX8850	1	AXSM	a
Description	The name of the switch.	The slot containing the front card.	The type of card, such as PXM, AXSM, AXSME.	a–active s–standby i–initialized

CLI Syntax

This section explains the syntax for using commands in the CLI. The following topics are discussed:

- Command Notation
- Command Parameters
- Command Entry

Command Notation

The notations for the CLI syntax are as follows:

- Commands appear in **bold**, for example: **addport**
- Keywords appear in **bold**, for example: **-ds3**
- Literal strings appear in **bold**, for example: **yes**
- Variables appear in *italics*, for example: *bay.line*
- Required parameters appear within arrowheads (< >), for example: <*ifNum*>
- Optional parameters appear within square brackets ([ ]), for example: [**-minvpi** *minvpi*]
- A vertical bar (|) represents the logical OR function.

Command Parameters

Parameters act as the arguments for the command. Parameters may consist of variables, keywords, and literal strings.

Commands may include parameters that are keyword-driven or position-dependent.

Position-dependent Parameters

You must type position-dependent parameters in the order they appear in the syntax description. For example, to add a logical port, you must enter the required, position-dependent parameters as follows:

addport <*ifNum*> <*bay.line*> <*guaranteedRate*> <*maxrate*> <*sctID*> <*ifType*> [*vpi*]

Keyword-driven Parameters

For a keyword-driven parameter, the keyword is preceded by a dash and followed by a variable, for example:

[**-timeout** *secs]*

Keyword-driven parameters are usually not position-dependent.

In the following example, the command contains both keyword-driven and position-dependent parameters.

The keyword-driven parameters appear first in a specific order. The keyword-driven parameters can be in any order after that.

delcons <*ifNum*> <*vpi*> <*vci*> [**-num** *num. conns to del*] [**-verbose 1 | 0**]

Command Entry

You enter a command by pressing the Return key or Enter key after you have typed the name of the command and all of its parameters in the proper order.

If you enter a command with incorrect parameters or with no parameters (when parameters are required), the CLI displays a message with the correct syntax, parameters, and ranges for the command. The message may also suggest what the problem is.

AXSM Models

Individual AXSM cards are identified by the model number. The model number identifies the number of lines on the card and the rate of speed of the lines. For example, the AXSM-1-2488 has one line that runs at 2488 megabits per second.

An AXSM card is a double-height front card that can have one or two bays in the back to accommodate one or two single-height back cards. The software refers to the upper bay as 1 and lower bay as 2.

Table 1-3 lists the different AXSM models with their back card types, number of lines, number of bays, and number of connections.

Table 1-3 AXSM Model Numbers, Back Cards, Lines, Bays, and Maximum Connections

Front Card Model Number and Chassis	Line Type: Back Cards	Number of Bays	Maximum Number of lines per Back Card	Maximum Number of Lines per Front Card	Maximum Number of SVCs	Maximum Number of SPVCs	Maximum Number of Connections
AXSM-1-2488 (MGX8850 only)	OC-48: SMFSR-1-2488, SMFLR-1-2488, SMFXLR-1-2488	1	1	1	128K	64K	128K
AXSM-1-2488/B (MGX8850 and MGX8950)	OC-48: SMFSR-1-2488/B, SMFLR-1-2488/B, SMFXLR-1-2488/B	1	1	1	128K	64K	128K
AXSM-2-622-E (MGX8850 only)	OC-12: SMFIR-2-622, SMFLR-2-622	1	2	2	60K	60K	60K
AXSM-4-622 (MGX8850 only)	OC-12: SMFIR-2-622, SMFLR-2-622	2	2	4	128K	64K	128K
AXSM-4-622/B (MGX8850 and MGX8950)	OC-12: SMFIR-2-622/B, SMFLR-2-622/B	2	2	4	128K	64K	128K
AXSM-8-155-E (MGX8850 only)	OC-3: SMFIR-8-155-LC, SMFLR-8-155-LC, MMF-8-155-MT	2	4	8	60K	60K	60K

Table 1-3 AXSM Model Numbers, Back Cards, Lines, Bays, and Maximum Connections (continued)

Front Card Model Number and Chassis	Line Type: Back Cards	Number of Bays	Maximum Number of lines per Back Card	Maximum Number of Lines per Front Card	Maximum Number of SVCs	Maximum Number of SPVCs	Maximum Number of Connections
AXSM-16-155 (MGX8850 only)	OC-3: SMFIR-8-155-LC, SMFLR-8-155-LC, STM-4-155-EL MMF-8-155-MT	2	8	16	128K	128K	128K
AXSM-16-155/B (MGX8850 and MGX8950)	OC-3: SMFIR-8-155-LC/B, SMFLR-8-155-LC/B, MMF-8-155-MT	2	8	16	128K	64K	128K
AXSM-16-T3E3-E (MGX8850 only)	T3 or E3: SMB-8-T3, SMB-8-E3	2	8	16	60K	60K	60K
AXSM-16-T3E3 (MGX8850 only)	T3 or E3: SMB-8-T3, SMB-8-E3	2	8	16	128K	64K	128K
AXSM-16-T3E3/B (MGX8850 and MGX8950)	T3 or E3: SMB-8-T3, SMB-8-E3	2	8	16	128K	64K	128K
AXSM-32-T1E1-E (MGX8850 only)	MCC-16-E1, RBBN-16-T1E1	2	16	32	32K	32K	32K
AXSM-1-9953-XG (MGX8950 only)	OC48/STM-16: SMFSR-1-9953 SMFIR-1-9953 SMFLR-1-9953 SMFXLR-1-9953	1	1	1	124K	124K	124K
AXSM-4-2488CH-XG (MGX8950 only)	OC192c/STM-64: SMF-4-2488-SFP SMFSR-1-2488-SFP SMFLR-1-2488-SFP SMFXLR-1-2488-SFP	1	4	4 lines and 64 STM channels per front card	124K	124K	124K
AXSM-8-622-XG	OC12/STM-4: SFP-4-622 SMFIR-622-SFP SMFLR-622-SFP SMFXLR-1-622-SFP	2	4	8	124K	124K	124K
AXSM-16-155-XG	SFP-8-155 SMFIR-1-155-SFP SMFLR-1-155-SFP MMF-1-155-SFP MCC-8-155	2	8	16	124K	124K	124K

In Table 1-3, the number of lines refers to the number of lines on a single back. Therefore, the highest possible number of lines available on the front card is equal to the number of lines on the back multiplied by the number of bays. For example, the AXSM-1-2488 card has one available line and the AXSM-16-155 card has 16 possible lines.

For specifications and illustrations of the AXSM cards, see the applicable hardware installation documentation for the Cisco MGX switch and card. For information on obtaining documentation, see the Obtaining Documentation section in the preface of this document.

Logical Ports

On AXSMs, a logical port is also called a virtual interface and is represented by the *ifNum* variable. The AXSMS can have the following types of interfaces:

- UNI (User-to-Network Interface)
- NNI (Network-to-Network Interface)
- VNNI (Virtual Network-to-Network Interface)
- VUNI (Virtual User-to-Network Interface)
- EVUNI (Enhanced Virtual User-to-Network Interface)
- EVNNI (Enhanced Virtual Network-to-Network Interface)

On UNI and NNI lines, you can configure only one logical port per line.

On VNNI and VUNI, you can configure multiple ports per line.

On EVNNI and EVUNI you can to specify a range of VPIs for a single interface, and this range of VPIs represents the virtual NNI or virtual UNI trunk.

Multiple VNNIs and EVNNIs can coexist on the same line.

The ranges for the number of logical ports (*ifNum*) on the AXSMs are as follows:

- AXSM: 1–60
- AXSM-E: 1–32
- AXSM-XG: 1–126

Common Acronyms

Some of the most commonly used acronyms in this manual are listed below:

Acronym	Definition
AXSM	ATM Switching Service Module
CLI	Command Line Interface
EVNNI	Enhanced Virtual Network-to-Network Interface
EVUNI	Enhanced Virtual User-to-Network Interface
ILMI	Integrated Local Management Interface
IMA	Inverse Multiplexing over ATM
NNI	Network-to-Network Interface

Acronym	Definition
PNNI	Private Network-Network Interface
PVC	Permanent Virtual Circuit
PXM	Processor Switching Module
SPVC	Soft Permanent Virtual Circuit
SVC	Switch Virtual Circuit
UNI	User-to-Network Interface
VNNI	Virtual Network-to-Network Interface
VUNI	Virtual User-to-Network Interface

List of Commands by Function

The AXSM commands can be divided into categories based on the function that they perform. Table 1-4 lists the commands by these functions. These functional categories are listed in the order in which they are performed.

- Session Management Commands
- Card Management Commands
- Line Management Commands
- Port Management Commands
- Resource Partition Management Commands
- IMA Management Commands
- LMI and ILMI Management Commands
- Connection Management Commands
- Channelization (Path) Management Commands
- Resource Monitor Management Commands

Table 1-4 AXSM Command List by Function

Command	Description	Page
Session Management Commands		
bye	Log out of session	5-49
clidbxlevel	CLI debug level	5-52
clrscrn	Clear screen	5-91
cmdhistory	Command history	5-92
cnfcli	Configure CLI	5-121
core	Core memory dump	5-164
dspDevErr	Display device errors	5-271
dspDevErrHist	Display device error history	5-273
dspfile	Display file	5-280

Table 1-4 AXSM Command List by Function (continued)

Command	Description	Page
dspframerdiagstat	Display Frame Receive Diagnostics Statistics	5-281
dspmempart	Display memory partition	5-336
dspmsgq	Display message queue	5-339
dspmsgqs	Display message queues	5-341
dspsem	Display semaphore	5-397
dspsems	Display all semaphores	5-399
dsptask	Display task info	5-404
dsptasks	Display task list	5-406
dspudpdiagcstat	Display user datagram protocol (UDP) diagnostic connection statistics (for the specified port)	5-410
dspudpdiagstat	Display user datagram protocol (UDP) diagnostic statistics	5-411
dumptrace	Dump trace	5-420
exit	Log out of session	5-421
help (?)	Help	5-422
history	CLI session history	5-423
logout	Log out of session	5-425
memShow	Show memory map	5-426
offdiagcstat	Off diagnostic connection statistics	5-427
offdiagstat	Off diagnostics statistics	5-428
ondiagcstat	Off diagnostic connection statistics	5-429
ondiagstat	On diagnostics statistics	5-430
ping	Ping	5-431
sesntimeout	Session timeout	5-435
sesnwatchdog	Session watchdog	5-436
seteng	Set Engineering mode	5-437
sfmDBShow	Show statistics file manager	5-439
shellConn	Enter shellCon mode	5-441
showsyserr	Set system error function on or off	5-442
smclrscrn	Service module clear screen	5-443
syserr	Show system errors	5-449
timeout	Time out to end of session	5-450
trace	Show current status of trace	5-451
users	Show user session info	5-467
who	See details about “who” a user is	5-468
whoami	Display user details about currently logged in user	5-469

Table 1-4 AXSM Command List by Function (continued)

Command	Description	Page
Card Management Commands		
bootchange	Change boot firmware on card	5-48
cc	Change to new card CLI	5-50
ccc	Change to new card CLI and display the priority of the current session.	5-51
clrbucketcstat	Clear buscket statistics	5-58
clrcdcnt	Clear card count	5-59
clrsarcnt	Clear segmentation and reassembly (SAR) counters	5-89
cnfcdmode	Configure card mode	5-111
cnfcdsct	Configure card SCT	5-112
cnfcdstat	Configure card statistics	5-115
cnfcellfilter	Configure the cell filter	5-118
cnfchandbg	Configure channelized debugging	5-119
dspbucketcstat	Display bucket connection statistics	5-223
dspcd	Display card	5-224
dspcdbucketcnt	Display card bucket count	5-227
dspcdcnt	Display card count	5-228
dspcdsct	Display card SCT	5-232
dspcdstatcnf	Display card statistics configuration	5-239
dsphotstandby	Display hot standby	5-282
dspsarcnt	Display SAR counters	5-390
dspsct	Display service class templates	5-392
dsptotals	Display line, port. and channel totals	5-409
dspversion	Display version	5-413
reboot	Reboot crd	5-432
setsctver	Set SCT version on card	5-438
Line Management Commands		
addapsln	Add APS line	5-2
addlnloop	Add line loopback	5-33
clradjlnalmcnt	Clear adjacent line alarm count	5-54
clralmcnt	Clear alarm count	5-56
clrbecnt	Clear BERT count	5-57
clrlncnt	Clear line count	5-78
clrlntrace	Clear line trace	5-79
cnfalm	Configure alarm	5-96
cnfapsln	Configure APS line	5-100

Table 1-4 AXSM Command List by Function (continued)

Command	Description	Page
cnfatlaslndiagstat	Configure Atlas line diagnostics	5-102
cnfatmln	Configure ATM line	5-105
cnfautolndiag	Configure auto line diagnostics	5-107
cnfbert	Configure BERT	5-108
cnfln	Configure line	5-137
cnflnalm	Configure line alarm	5-141
delapsln	Delete APS line	5-169
dellnloop	Delete line loopback	5-177
dnln	Down line	5-190
dspadjlnalm	Display adjacent alarm	5-194
dspadjlnalmcnt	Display adjacent line alarm count	5-195
dspalm	Display alarm	5-197
dspalms	Display alarms	5-202
dspalmcnt	Display alarm count	5-199
dspapsbkplane	Display APS backplane	5-205
dspapsln	Display APS line	5-206
dspapslns	Display APS lines	5-208
dspatlasdiagstatcnf	Display Atlas diagnostics statistics configuration	5-212
dspatlaslndiagstat	Display Atlas line diagnostics statistics	5-213
dspatmln	Display ATM line	5-218
dspautolndiag	Display auto line diagnostics	5-219
dspbecnt	Display BERT count	5-220
dspbert	Display BERT	5-221
dspbertstats	Display BERT statistics	5-222
dspegrbucketcnt	Display egress bucket count	5-275
dspingbucketcnt	Display PING bucket count	5-308
dspln	Display line	5-313
dsplnalm	Display the line and statistical alarm state	5-317
dsplnalmcnf	Display line alarm configuration	5-318
dsplnalmcnt	Display line alarm counters	5-319
dsplnalms	Display line alarms for all lines	5-321
dsplns	Display lines	5-329
dsplnbucketcnt	Display line bucket count	5-322
dsplncnt	Display line count	5-324
dsplnload	Display line load	5-326
dsplnpmbucketcnt	Display line performance bucket counters	5-327

Table 1-4 AXSM Command List by Function (continued)

Command	Description	Page
insbiterror	Insert bit error	5-424
startbert	Start BERT	5-444
stopbert	Stop BERT	5-446
switchapsln	Switch APS line	5-448
upln	Up line	5-464
Port Management Commands		
addport	Add port	5-40
clrportcnt	Clear port count	5-81
clrportcnts	Clear port counters	5-83
clrportdbgcnt	Clear port debug counters	5-85
cnfcosbdbg	Configure class of service debugging counters	5-130
cnfport	Configure port	5-151
cnfportdbg	Configure port debugging	5-153
cnfportdbgcnt	Configure port debug counters	5-154
delport	Delete port	5-180
dnallports	Down all ports	5-182
dnport	Down port	5-193
dspatlasdiagcnfcstat	Display Atlas diagnostics configuration statistics	5-209
dspatlasdiagcstat	Display Atlas diagnostics connection statistics	5-211
dspcosbdbgcnf	Display COSB (class of service buffer) debugging configuration	5-266
dspcosbdbgcnt	Display COSB (class of service buffer) debugging counters	5-267
dspport	Display port	5-354
dspports	Display ports	5-356
dspportbucketcnt	Display port bucket count	5-357
dspportcnt	Display port count	5-358
dspportdbgcnf	Display port debug configuration	5-358
dspportdbgcnt	Display all port debugging counters	5-358
dspportload	Display port load	5-363
dspportsct	Display port SCT	5-364
dspqecnfcnt	Display queuing engine configuration count	5-380
dspspvcif	Display SPVC address information (specific interface)	5-402
dspspvcifs	Display SPVC address information (all interfaces)	5-403
upallports	Up all ports	5-457
upport	Up port	5-466

Table 1-4 AXSM Command List by Function (continued)

Command	Description	Page
Resource Partition Management Commands		
addpart	Add partition	5-36
addrscprtn	Add resource partition	5-45
cnfrscprtn	Configure resource partition	5-158
cnfpart	Configure partition	5-144
delpart	Delete partition	5-179
delrscprtn	Delete resource partition	5-181
dspload	Display load on partition	5-333
dsppart	Display partition	5-342
dspparts	Display partitions	5-344
dsprscprtn	Display resource partition	5-387
dsprscprtns	Display all resource partitions	5-389
IMA Management Commands		
addimagrp	Add IMA group	5-25
addimalnk	Add IMA link	5-27
addimaport	Add IMA port	5-28
clrimadelay	Clear IMA delay	5-69
clrimagrpalmcnt	Clear IMA group alarm count	5-70
clrimagrpalmcnts	Clear IMA group alarm counters	5-71
clrimagrpcnt	Clear IMA group count	5-72
clrimalnkcnt	Clear IMA link count	5-73
clrimalnkcnts	Clear IMA link counters	5-74
cnfatmimagrp	Configure ATM IMA group	5-103
cnfimagrp	Configure IMA group	5-132
cnfimalnk	Configure IMA link	5-134
cnfimalnktst	Configure IMA link test	5-135
delimagrp	Delete IMA group	5-174
delimalnk	Delete IMA link	5-175
dnimagrp	Down IMA group	5-188
dspatmimagrp	Display ATM IMA group	5-215
dspimagrp	Display IMA group	5-287
dspimagrps	Display IMA group	5-290
dspimagrpalm	Display IMA group alarm	5-292
dspimagrpalms	Display IMA group alarms	5-294
dspimagrpalmcnt	Display IMA group alarm count	5-296
dspimagrpbucketcnt	Display IMA group bucket count	5-297

Table 1-4 AXSM Command List by Function (continued)

Command	Description	Page
dspimagrpcnt	Display IMA group count	5-298
dspimalnk	Display IMA link	5-299
dspimalnks	Display IMA links	5-301
dspimalnkalm	Display IMA link alarm	5-303
dspimalnkalms	Display IMA link alarms	5-304
dspimalnkbucketcnt	Display IMA link bucket count	5-305
dspimalnkcnt	Display IMA link count	5-306
rstrtimagrp	Restart IMA group	5-433
startimalnktst	Start IMA link test	5-445
stopimalnktst	Stop IMA link test	5-447
upimagrp	Up IMA group	5-462
LMI and ILMI Management Commands		
addlmi	Add LMI	5-31
clrilmicnt	Clear ILMI count	5-68
clrlmistat	Clear LMI statistics	5-75
clrlmitrace	Clear LMI trace	5-77
cnfilmi	Configure ILMI	5-131
cnflmitrace	Configure LMI trace	5-136
dellmi	Delete LMI	5-176
dnilmi	Down ILMI	5-185
dnlmi	Down ILMI	5-189
dspilmi	Display ILMI	5-283
dspilmis	Display ILMIs	5-286
dspilmicnt	Display ILMI count	5-285
dsplmi	Display LMI	5-309
dsplmis	Display LMIs	5-310
dsplmistat	Display LMI statistics	5-311
dsplmitrace	Display LMI trace	5-312
upilmi	Up ILMI	5-461
uplmi	Up LMI	5-463
Connection Management Commands		
addchanloop	Add channel loopback	5-6
addcon	Add connection	5-8
addfdr	Add feeder connection	5-24
clrchancnt	Clear channel count	5-60
clrchancnts	Clear channel counters	5-61

Table 1-4 AXSM Command List by Function (continued)

Command	Description	Page
clrchandbg	Clear channelized debugging	5-62
clrchandbgcnt	Clear all channelized debugging counters	5-63
clrcosbdbgcnt	Clear COSB (class of service buffer) debugging counters	5-64
clrfdrstat	Clear feeder statistics	5-67
cnfabr	Configure available bit rate	5-93
cnfcon	Configure connection	5-123
copychans	Copy one or more channels from a single connection	5-160
copycons	Copy one or more connection endpoints from a single endpoint	5-162
delallcon	Delete all connections	5-168
delchanloop	Delete channel loopback	5-170
delcon	Delete connection	5-171
delcons	Delete connections	5-172
delfdr	Delete feeder connection	5-173
dncon	Down connection	5-183
dncons	Down connections	5-184
dspchancnt	Display channel count	5-240
dspchandbgcnf	Display channelized debugging configuration	5-244
dspchandbgcnt	Display channelized debugging counters	5-245
dspchanloop	Display channel loopback	5-246
dspchantests	Display channel tests	5-247
dspcon	Display connection	5-249
dspconalarms	Display connection alarms	5-252
dspcons	Display Connections	5-262
dspconalmcnts	Display Configuration Alarm Counts	5-253
dspconalms	Display Configuration Alarm	5-254
dspconhwcnf	Display Connection Hardware Configuration	5-255
dspconload	Display Connection Load	5-260
dspCproCnfg	Display connection programming configuration	5-269
dspcprotbls	Display connection programming tables	5-270
dspfdr	Display feeder connection	5-276
dspfdrs	Display feeder connections	5-277
dspfdrstat	Display feeder statistics	5-278
dspmcastload	Display multicast load	5-335
dspsegment	Display segment	5-395

Table 1-4 AXSM Command List by Function (continued)

Command	Description	Page
dspsegments	Display segments	5-396
dspvsicon	Display VSI connection	5-415
dspvsicons	Display VSI connections	5-417
dspvsipart	Display VSI partition	5-418
dspvsiparts	Display VSI partitions	5-419
rrtcon	Reroute connection	5-434
tstconseg	Test configuration segment	5-452
tstdelay	Test delay	5-454
upcon	Up connection	5-459
upcons	Up connections	5-460
Channelization (Path) Management Commands		
clrpathalmcnt	Clear path alarm count	5-80
cnfatmlayer	Configure ATM layer	5-104
cnfpath	Configure path	5-147
cnfpathalm	Configure path alarm	5-149
dnpath	Down path	5-192
dspatmlayer	Display ATM layer	5-216
dspatmlayercnt	Display ATM layer count	5-217
dsppath	Display path	5-345
dsppaths	Display paths	5-347
dsppathalm	Display path alarm	5-349
dsppathalms	Display path alarms	5-353
dsppathalmcnf	Display path alarm configuration	5-350
dsppathalmcnt	Display path alarm count	5-351
uppath	Up path	5-465
Resource Monitor Management Commands		
cnfprfparam	Configure profiler parameters	5-156
cnfrmrsrc	Configure resource monitor resource	5-157
dspprf	Display profiler	5-370
dspprfhist	Display profiler history	5-376
dsprmalms	Display resource monitor alarms	5-382
dsprminfo	Display resource monitor information	5-383
dsprmrsrc	Display resource monitor resource	5-384
dsprmrsrcs	Display resource monitor resources	5-386

CHAPTER 2

Preparing AXSM Lines for Communication

This chapter describes how to prepare AXSM cards and lines for communications to other switches using the command-line interface (CLI). It includes the following sections:

- Preparing for Provisioning, page 2-1
- Quickstart Provisioning Procedures, page 2-2
- General AXSM Provisioning Procedures, page 2-6

Note AXSM cards, lines, and ports can be configured using the Cisco WAN Manager application. For full details on how to set up a connection through the Cisco WAN Manager, refer to the *Cisco WAN Manager User's Guide, Release 15.1*.

Note You can get information about most CLI commands by entering the command without parameters. Ordinarily, experienced users can configure AXSM card connections using just the quickstart procedures and the online help facilities. For a detailed description of the commands used in this chapter, refer to Chapter 5, "AXSM Command Reference."

Preparing for Provisioning

Before you begin provisioning line and ports on AXSM service modules, you need to initialize the cards you plan to provision. Then you should develop and implement a plan for the card and line redundancy options available for each service module. This plan determines how service modules and their back cards must be installed in the chassis, and how lines must connect to the cards before software configuration starts.

Without a plan developed for these services, a configuration change for any of these services has the potential to interrupt service and can require substantial configuration teardown. Table 2-1 defines the AXSM card redundancy and line redundancy support features, per available AXSM card models.

Table 2-1 Card Redundancy and Line Redundancy Features per AXSM Card

Card Type	Card Redundancy Options	Line Redundancy Supported
AXSM-1-2488 AXSM-1-2488/B AXSM-1-9953-XG	Standalone	None
	1:1	Intercard APS

Table 2-1 Card Redundancy and Line Redundancy Features per AXSM Card (continued)

Card Type	Card Redundancy Options	Line Redundancy Supported
AXSM-2-622-E	Standalone	None
	1:1	Intercard and intracard APS
AXSM-4-622 AXSM-4-622/B AXSM-4-2488-XG	Standalone	Intracard APS
	1:1	Intercard and intracard APS
AXSM-8-155-E AXSM-8-622-XG	Standalone	Intracard APS
	1:1, 1+1	Intercard and intracard APS
AXSM-16-155 AXSM-16-155/B AXSM-16-155-XG	Standalone	Intracard APS
	1:1	Intercard and intracard APS
AXSM-16-T3E3 AXSM-16-T3E3/B AXSM-16-T3E3-E AXSM-32-T1E1-E	Standalone	None
	1:1	

For instructions on initializing cards and configuring card and line redundancy, refer to the following guides:

- *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*
- *Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.2*
- *Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.2.00*

Note The procedures in this guide do not apply to Cisco MGX 8850 (PXM1E), Cisco MGX 8830, or Cisco MGX 8830/B switches because these switches do not support AXSM cards. On these switches, ATM communication is supported on the PXM1E, AUSM, and MPSM cards.

Note For the purposes of this guide, the term "AXSM" refers to all types of AXSM cards. In this document, the term AXSM/A distinguishes the first release of AXSM from AXSM/B, AXSME, and AXSM-XG cards.

Quickstart Provisioning Procedures

This section includes quickstart procedures for preparing AXSM cards and lines for communications, as follows:

- Preparing Cards and Lines for Configuration Quickstart
- Channelizing SONET Lines Configuration Quickstart
- Channelizing SDH Lines Configuration Quickstart

Preparing Cards and Lines for Configuration Quickstart

The following quickstart procedure provides a summary of the tasks required to prepare AXSM lines for configuration as ATM trunks and lines. This procedure is provided as an overview and as a quick reference for those who already have configured Cisco MGX switches.

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session with the active PXM card. **Note** To perform all the procedures in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	**addred** <*options*>	From the active PXM card, define which cards are operating as redundant cards. See Table 2-1 for more details on redundancy options supported. For instructions on adding card redundancy, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.
Step 3	**cc** <*options*>	Change to an active AXSM card from which you will select a card SCT.
Step 4	**cnfcdsct** <*sctid*> Related commands: **dspcd**	Apply ATM communications parameters from a preconfigured Service Class Template (SCT) file to all communications between the card you are configuring and the other cards in the switch. See the "Selecting and Viewing Service Class Templates".
Step 5	**upln** <*bay.line*> Related commands: **dsplns** **dspln** -*type* <*bay.line*>	Bring up lines. This step establishes physical layer connectivity between two switches. See the "Bringing Up Lines" section on page 2-10.
Step 6	**cnfln** <*options*> Related commands: **dsplns** **dspln** -*type* <*bay.line*>	Configure lines. See the "Configuring Lines" section on page 2-12.
Step 7	**addapsln** <*workingIndex*> <*protectIndex*> <*archmode*>	Configure a redundant relationship between two AXSM lines. See the "Establishing Redundancy between Two Lines with APS" section on page 2-14.
Step 8	For an AXSM-XG only: **cnfpath** **uppath** Related commands: **dsppath** **dsppaths**	Add and configure a channelized path. See the appropriate following section, as applicable to the type of lines you are configuring:. • "Channelizing SONET Lines Configuration Quickstart" section on page 2-4. • "Channelizing SDH Lines Configuration Quickstart" section on page 2-5.

Channelizing SONET Lines Configuration Quickstart

> **Note** Channelizing is not supported on non-XG AXSM Cards. This section only applies to AXSM-XG cards

This procedure describes how to create channelized SONET paths on an AXSM-XG card:

i

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session with the active PXM card. **Note** To perform all the procedures in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	**cc** <*options*>	Change to an active AXSM-XG card on which you will configure a path.
Step 3	**upln**	Bring up a line (*bay.line*). When you bring up a line, the corresponding SONET path has a width of 3. See the "Bringing Up Lines" section on page 2-10.
Step 4	**cnfpath -sts** <*pathid*> **-width** <*width spec*> Related commands: **dsppath** dsppaths	From the active AXSM-XG card, configure the SONET path width. See the "Configuring Lines" section on page 2-12.
Step 5	**uppath -sts** <*pathid*> Related commands: **dsppath** dsppaths	Bring up the SONET path. See the "Bringing Up and Configuring SONET Paths" section on page 2-22.
Step 6	**cnfpath -sts** <*pathid*> -payload <*sts_au_payload_type*> Related commands: **dsppath** **dsppaths**	Configure the payload type for the STS path you are channelizing. See the "Bringing Up and Configuring SONET Paths" section on page 2-22.
Step 7	**uppath [-pathfilter]** <*pathid*>	Bring up the sub-paths that were created in Step 6. See the "Bringing Up and Configuring SONET Paths" section on page 2-22. .
Step 8	**cnfpath** <*options*> Related commands: **dsppath** **dsppaths**	Configure the sub-paths.. See the "Bringing Up and Configuring SONET Paths" section on page 2-22.

Channelizing SDH Lines Configuration Quickstart

Note Channelizing is not supported on non-XG AXSM Cards. This section only applies to AXSM-XG cards

This procedure describes how to create channelized SDH lines on an AXSM-XG card:

i

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session with the active PXM card. **Note** To perform all the procedures in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	**cc** <*options*>	Change to an active AXSM-XG card on which you will configure a path.
Step 3	**upln**	Bring up a line. When you bring up a line, the corresponding SDH path has a width of 3. See the “Bringing Up Lines” section, which appears later in this chapter.
Step 4	**cnfln -**<*bay.line*> **-slt 2 -clk** <*clockSource*>	Configure the line you brought up in Step 3 to be an SDH line. See the “Channelizing an SDH Line” section on page 2-23.
Step 5	**cnfpath -sts** <*pathid*> **-width** <*width spec*> Related commands: **dsppath** **dsppaths**	From the active AXSM card, configure the SDH path width. See the “Bringing Up and Configuring SDH Paths” section on page 2-25.
Step 6	**uppath -sts** <*pathid*> Related commands: **dsppath** **dsppaths**	Bring up the SDH path. See the “Bringing Up and Configuring SDH Paths” section on page 2-25.
Step 7	**cnfpath -sts** <*pathid*> -payload <*sts_au_payload_type*> Related commands: **dsppath** **dsppaths**	Configure the payload type for the STS path you are channelizing. See the “Bringing Up and Configuring SDH Paths” section on page 2-25.
Step 8	**uppath [-pathfilter]** <*pathid*>	Bring up the sub-paths that were created in Step 7.See the “Bringing Up and Configuring SDH Paths” section on page 2-25.
Step 9	**cnfpath** <*options*> Related commands: dsppath dsppaths	Configure the sub-paths. See the “Bringing Up and Configuring SDH Paths” section on page 2-25..

General AXSM Provisioning Procedures

The following sections describe general provisioning procedures for AXSM cards:

- Selecting and Viewing Service Class Templates
- Setting Up Lines
- Establishing Redundancy between Two Lines with APS
- Channelizing SONET, SDH, and DS3 (T3) Lines into Paths

Selecting and Viewing Service Class Templates

The sections describe SCTs, and how to use them to configure AXSM cards:

- Overview of Service Class Templates
- AXSM Service Class Templates

See additional sections of working with SCTs in “Managing Card SCTs” section on page 4-4 and “Managing Port SCTs” section on page 4-9.

Overview of Service Class Templates

A Service Class Template (SCT) is a file that contains default configuration data for switch connections and for configuring the hardware to support connections. When you configure a connection, or when an SVC is established, the switch analyzes the connection setup request data, any local configuration data, and the SCTs that apply to the port and to the card.

For example, if an SPVC configuration does not include required data for the requested class of service (COS), default values from the SCT files are used. If an SVC request or SPVC configuration specifies configuration values that are different from the SCT values, the specified values override the default SCT values.

There are two types of SCTs:

- Card SCTs
- Port SCTs

Card SCTs define configuration parameters for the hardware that transfers data between the a service module and the switch back plane. You can assign one card SCT to each service module. Port SCTs define configuration parameters for the hardware that transfers data between a service module and a communication line to another switch or CPE. Port SCTs are assigned when a port is configured, and you can use different port SCTs on the same card, provided that the port SCT you select is designed for that card type.

Some SCT parameters control the service module hardware, and others are used as default values for connection parameters. A complete discussion of the SCT parameters is beyond the scope of this book.

SCT parameters are used to do the following:

- Connection policing.
- Connection admission control (CAC).
- Provide default connection parameters.
- Provide connection threshold parameters.
- Set up class of service buffer (COSB) parameters and threshold values.

SCTs simplify configuration by providing default values that will work for most connections. This reduces the number of parameters that need to be defined when setting up connections. Without SCTs, you need to perform a lot of detailed manual configuration on each and every port on the switch. This is time consuming and error prone.

Typically, traffic profiles are defined by a handful of traffic engineering experts who understand the service level agreements and expected traffic pattern on the ports. These experts define the SCTs for each port in the system. Once the SCT is applied on the port, you do not need to (re)configure the switch. The parameters in the SCTs define generic thresholds and priorities of queues that can be understood without having to go through the programming details of Queuing engines, such as QE1210.

When configuring a service module card SCT, your goal should be to select the card SCT that will support the majority of planned connections on that card. When configuring a service module port SCT, your goal should be to select the port SCT that supports the majority of planned connections on that port.

Each service module contains default SCT parameters that you can use for communications. Cisco also supplies additional SCTs that you can use to better support communications. If none of the Cisco supplied SCTs meet your needs, you can use Cisco WAN Manager (CWM) to create your own custom SCTs. You can not create or modify SCT files using the CLI.

For more information on:

- Managing card and port SCTs on AXSM cards through the command line, refer to "Managing Card SCTs" section on page 4-4 or "Managing Port SCTs" section on page 4-9.
- Configuring SCTs and SCT parameters, refer to the *Cisco WAN Manager User's Guide, Release 15.1*.
- Downloading, registering, and managing SCTs on the PXM card, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*

AXSM Service Class Templates

SCT files are applicable to the AXSM cards. Each SCT is classified by card or service module type, by whether it is a card or port SCT, and as either policing or non-policing. Although card SCTs may contain policing parameters, these parameters are ignored.

Typically, policing SCTs are used on UNI ports at the edge of the ATM network and control traffic entering the network. Non-policing SCTs are typically on trunk ports that interconnect switches within the network.

Note If traffic is properly controlled at the edges of an ATM network, there should be no need for policing within the network.

Table 2-2 lists the SCTs supplied by Cisco for AXSM cards. For the very latest information on Cisco SCTs, refer to the *Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.2.00*

Note For information on managing card and port SCTs on AXSM cards, refer to "Managing Card SCTs" section on page 4-4 or "Managing Port SCTs" section on page 4-9.

Table 2-2 Cisco Provided SCTs for AXSM Cards

Card Type	SCT Type	SCT ID	PNNI Policing[1]	MPLS Policing[1]	Notes
AXSM	Card[2]	2[3]	N/A	—	There is no operational difference between AXSM card SCTs 2 and 3. Cisco recommends using AXSM card SCT 4 or 5.
		3[3]	N/A	—	
		4	N/A	N/A	There is no operational difference between AXSM card SCTs 4 and 5.
		5	N/A	N/A	
	Port	2[3]	On	—	Cisco recommends using AXSM port SCT 4 or 5.
		3[3]	Off	—	
		4	On	Off	PNNI policing on.
		5	Off	Off	PNNI policing off.
AXSM-E	Card[2]	4	N/A	N/A	All three AXSM-E card SCTs are identical.
		5	N/A	N/A	
		52	N/A	N/A	
	Port	4	On	Off	Use for UNI ports on interfaces faster than T1 or E1. There is no difference between port SCTs 4 and 5.
		5	On	Off	
		6	Off	Off	Use for NNI ports on interfaces faster than T1 or E1.
		52	On	Off	Use on AXSM-32-T1-E1-E UNI ports.
		53	Off	Off	Use on AXSM-32-T1-E1-E NNI ports.
		54	On	Off	Optimized for UNI IMA groups that use 4 T1/E1 lines or less.[4]
		55	Off	Off	Optimized for NNI IMA groups that use 4 T1/E1 lines or less.[4]

Table 2-2 Cisco Provided SCTs for AXSM Cards (continued)

Card Type	SCT Type	SCT ID	PNNI Policing[1]	MPLS Policing[1]	Notes
AXSM-XG	Card[2]	1	N/A	N/A	Optimized for an OC-192 backplane rate. Recommended for use in MGX 8950 switches.
		2	N/A	N/A	Optimized for an OC-48 backplane rate. Recommended for use in MGX 8850 switches.
	Port	100	Off	Off	Optimized for OC-192 interface path rates.
		101	Off	On	
		110	On	Off	
		111	On	On	
		200	Off	Off	Optimized for OC-48 interface path rates.
		201	Off	On	
		210	On	Off	
		211	On	On	
		300	Off	Off	Optimized for OC-12 interface path rates.
		301	Off	On	
		310	On	Off	
		311	On	On	
		400	Off	Off	Optimized for OC-3 interface path rates.
		401	Off	On	
		410	On	Off	
		411	On	On	
		500	Off	Off	Optimized for DS-3 interface path rates.
		501	Off	On	
		510	On	Off	
		511	On	On	

1. Cisco recommends using SCTs with policing enabled for UNI ports and using SCTs with policing disabled for NNI ports.
2. Although policing card SCTs are provided for some service modules, the policing parameters are not used. All card SCTs are non-policing.
3. SCTs 2 and 3 were created when MGX switches supported PNNI only and were distributed with Release 2.0. These SCTs are provided for backward compatibility. Cisco recommends the use of SCTs that support PNNI and MPLS for all new installations and upgrades.
4. For IMA groups with 5-8 links, construct an SCT that uses 1/2 of the value of thresholds defined in SCTs 54 and 55. For IMA groups with 9-16 links, construct an SCT that uses 1/4 of the value of thresholds defined in SCTs 54 and 55.

Setting Up Lines

The first step in configuring AXSM lines is to bring up and configure the physical lines that are connected to the switch. The following section describe these tasks:

- Bringing Up Lines
- Configuring Lines
- Verifying Line Configuration

Bringing Up Lines

Installing an AXSM card can add from 1 to 32 lines to your switch. You must bring up a line before you can configure the line or provision services on the line.

Before a line is brought up, or after it is brought down, the switch does not monitor the line. The AXSM port status light for the line is unlit, and all line alarms are cleared.

When you bring up a line, the switch starts monitoring the line. The AXSM port status light is green when physical layer communications are established with a remote switch. If physical layer communications problems are detected, the port status light turns red, and alarms are reported. The port status light turns yellow when physical layer communications problems are detected on the remote switch.

Note APS *protection* lines for intracard redundancy should be left down. APS automatically brings up each line at the appropriate time. For general information on APS line redundancy, refer to Chapter 2 of the the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*. For information on configuring APS lines, see the "Establishing Redundancy between Two Lines with APS" section on page 2-14.

Tip To minimize the number of alarms and failed port status lamps (which display red), keep lines down until they are ready for operation.

To bring up a line on the switch, use the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Select the card on which you want to bring up a line with the **cc** command.

```
M8950_DC.5.AXSM.a > cc <slotnumber>
```

Step 3 Enter the **upln** command:

```
M8950_DC.5.AXSM.a > upln <bay.line>
```

Replace <*bay*> with 1 if the line is connected to a back card in the upper bay, or replace it with 2 if the line is connected to a back card in the lower bay. Replace <*line*> with the number that corresponds to the line you want to configure.

Table 2-3 lists the valid bay numbers and line numbers for each AXSM card. Figure 2-1 illustrates the bay and line numbers used on the Cisco MGX 8850(PXM45), MGX 8950, and MGX 8880 switches.

Table 2-3 AXSM Card Types

Front Card	Valid Line Numbers	Valid Bay Numbers
AXSM-1-2488 AXSM-1-2488/B AXSM-1-9953-XG	1	1
AXSM-2-622-E	1	1, 2
AXSM-4-622 AXSM-4-622/B	1 to 2	1, 2
AXSM-4-2488-XG	4	1

Table 2-3 AXSM Card Types (continued)

Front Card	Valid Line Numbers	Valid Bay Numbers
AXSM-8-155-E AXSM-8-622-XG	1 to 4	1, 2
AXSM-16-T3E3 AXSM-16-T3E3/B AXSM-16-T3E3-E AXSM-16-155 AXSM-16-155/B AXSM-16-155-XG	1 to 8	1, 2
AXSM-32-T1E1-E	1 to 16	1, 2

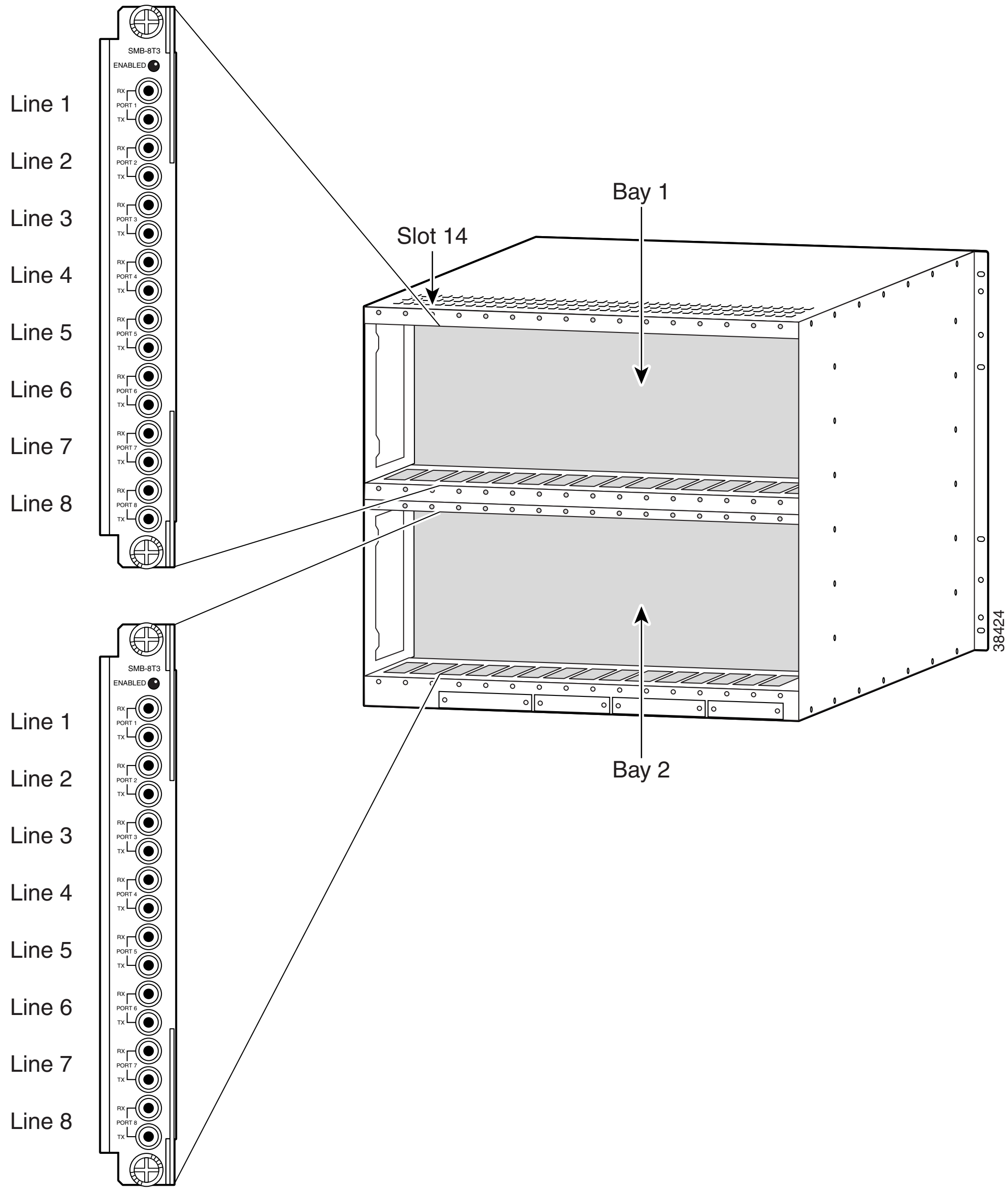
Step 4 Enter the **dsplns** command. The line state column shows whether each line is up or down as shown in the following example:

```
M8950_DC.5.AXSM.a > dsplns
                                                Medium Medium
 Sonet       Line     Line      Line    Frame   Line   Line     Alarm    APS
 Line        State    Type      Lpbk    Scramble Coding Type     State    Enabled
 ----------- ----- ------------ ------ -------- ------ -------- -------- -------
 1.1            Up  sonetSts48c NoLoop   Enable  Other    Other    Clear Disable
```

The line state—Up or Down—represents the administrative intent for the line. For example, a line is reported as Down until an administrator brings up the line. Once the administrator brings up the line, the line state remains Up until the administrator brings the line down with the **dnln** command.

The alarm state indicates whether the line is communicating with a remote switch. When the alarm state is reported as Clear, the physical devices at each end of the line have established physical layer communications. ATM connectivity is established later when interfaces or ports are configured on the line.

Figure 2-1 Bay and Line Numbers



Configuring Lines

All line types are brought up with a default configuration. When configuring trunks between two Cisco MGX 8850 (PXM45), MGX 8950, or MGX 8880 switches, you may be able to accept the defaults for each switch and thus minimize configuration time. When configuring a line to another type of device, ensure that both devices are using the same configuration parameters on the shared line.

At the physical communications level, you can configure the following line options :

- Line type
- Line clock source

The following procedure describes how to configure SONET lines.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 If you do not know the line number you want to configure, enter the **dsplns** command to display a list of the lines.

```
8850_NY.1.AXSM.a > dsplns
```

Note Remember that you cannot configure a line until you have brought it up as described in the previous section, "Bringing Up Lines."

Step 3 To display the configuration for a line, enter the **dspln** command. For example:

```
M8950_DC.16.AXSMXG.a > dspln 1.1
  Line Number            : 1.1
  Admin Status           : Up                  Alarm Status        : Clear
  Loopback               : NoLoop              APS enabled         : Disable
  Frame Scrambling       : Enable              Channelized         : Yes
  Xmt Clock source       : loopTiming          Num of STS-Paths/AUs: 4
  Line Type              : Sts48c              Provisioned Paths/AUs: 1
  Medium Type(SONET/SDH) : SONET               Number of ports     : 0
  Medium Time Elapsed    : 276                 Number of partitions: 0
  Medium Valid Intervals : 96                  Number of SPVC      : 0
  Medium Line Type       : SSMF                Number of SPVP      : 0
  Number of SVC          : 0

M8950_DC.16.AXSMXG.a >
```

For more information, see the "Verifying Line Configuration" section later in this chapter.

Step 4 To configure a SONET line, enter the following command:

```
cnfln -sonet <bay.line> -slt <LineType> -clk <clockSource>
```

Table 2-4 lists the parameter descriptions for configuring AXSM lines. Be sure to use only the parameters listed for SONET lines.

Table 2-4 Parameters for cnfln Command

Parameter	Description
-sonet	Enter the keyword (**-sonet**) followed by the *bay.line* number. Ranges: • bay: 1–2 • line: 1–8
-slt	Enter the keyword (**-slt**) followed by the *LineType* identifier. Identifiers: • 1 = SONET • 2 = SDH
-clk	Enter the keyword (**-clk**) followed by the *clockSource* identifier. Identifiers: • 1 = loopTiming • 2 = localTiming
-description	The *circuitIdentifier* is a text string with up to 64 characters that uniquely identifies the line.

Step 5 To verify your configuration changes, enter the **dspln** command.

Verifying Line Configuration

Use the following procedure to display the configuration of a line.

Step 1 Establish a CLI management session at any user access level.

Step 2 If you do not know the line number you want to view, display a list of the lines by entering the following command:

```
M8950_DC.16.AXSMXG.a > dsplns
```

Step 3 To display the configuration of a single line, enter the following command:

```
dspln <bay.line>
```

Table 2-5 describes the **dspln** command parameters. The line configuration appears as follows:

```
M8950_DC.16.AXSMXG.a > dspln 1.1
  Line Number            : 1.1
  Admin Status           : Up                  Alarm Status        : Clear
  Loopback               : NoLoop              APS enabled         : Disable
  Frame Scrambling       : Enable              Channelized         : Yes
  Xmt Clock source       : loopTiming          Num of STS-Paths/AUs: 4
  Line Type              : Sts48c              Provisioned Paths/AUs: 1
  Medium Type(SONET/SDH) : SONET               Number of ports     : 0
  Medium Time Elapsed    : 21                  Number of partitions: 0
  Medium Valid Intervals : 96                  Number of SPVC      : 0
  Medium Line Type       : SSMF                Number of SPVP      : 0
  Number of SVC          : 0

M8950_DC.16.AXSMXG.a >
```

Table 2-5 dspln Command Parameters

Parameter	Description
type	The parameter specifies the type of line that is connected to the switch. Replace <*type*> with **-sonet**, **-ds3**, **-e3**, or **-e1**.
bay	Replace <*bay*> with **1** if the line is connected to a back card in the upper bay, or replace it with **2** if the line is connected to a back card in the lower bay.
line	Replace <*line*> with the number that corresponds to the line you want to view. Table 2-3 lists the valid line numbers for each AXSM card.

Establishing Redundancy between Two Lines with APS

The Cisco MGX switch supports two types of line redundancy:

- Intracard redundancy, where the working and protection lines are connected to the same card.
- Intercard redundancy, where the working line is connected to the primary card, and the protection line is connected to the secondary card.

The AXSM card support, whether intracard or intercard, is called out in Table 2-1 on page 2-1.

Intracard and intercard APS line redundancy is discussed in greater detail in the "Managing Redundant APS Lines" section of the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

The sections that follow briefly describe how to configure these intracard and intercard APS lines.

- Adding Intracard APS Lines
- Adding Intercard APS Lines

Adding Intracard APS Lines

Use the following procedure to establish redundancy between two lines on the same card.

Step 1 Establish a configuration session using a user name with GROUP1_GP privileges or higher.

Step 2 If you have not done so already, bring up the working line as described in the "Bringing Up Lines" section, which appears earlier in this chapter.

Step 3 Enter the **addapsln** command as follows:

```
addapsln <workingIndex> <protectIndex> <archmode>
```

Replace <*workingIndex*> with the location of the working line using the format *slot.bay.line*. Replace <*protectIndex*> with the location of the protection line, using the same format used for the working line.

Note For intracard redundancy, the working index and protection index must specify ports on the same card, so the slot and bay number for the working and protection index will always match.

Replace <*archmode*> with the option number that selects the automatic protection switching (APS) architecture mode you want to use. Table 2-6 shows the option numbers and the architecture modes they select.

Table 2-6 APS Line Architecture Modes

Option	Description
1	Selects the following APS protocol signaling standards (transmission on both working and protection lines): • 1+1 Bellcore GR-253 APS • ITU-T G783 Annex A
2	Selects 1:1 Bellcore GR-253 APS protocol signaling (transmission on either the working line or the protection line) for intracard APS.
3	Selects 1+1 ITU-T G.783 AnnexB APS protocol signaling (transmission on both working and protection lines).
4	Selects 1+1 Y-cable signaling without K1 and K2. **Note** This option is not supported.
5	Selects 1+1 straight cable signaling without K1 and K2. **Note** This option is not supported.

In the following example, 1+1 APS redundancy is assigned to two lines on the same card:

```
M8950_DC.5.AXSM.a > addapsln 9.2.1 9.2.2 1
```

Step 4 To display a list of all the APS lines on an AXSM card, enter the **dspapslns** command on the active AXSM card.

Step 5 To display information on a specific APS line, enter the **dspapsln** <*slot.bay.line*> command on the active AXSM card.

Refer to the "Managing Redundant APS Lines" section in the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2* for more details

Adding Intercard APS Lines

Use the following procedure to establish redundancy between two lines between different cards.

Note For intercard APS to operate properly, an APS connector must be installed between redundant AXSM/A, AXSM/B, AXSM-E, and AXSM-16-155-XG cards. APS functionality is built directly into the AXSM-4-2488CH-XG, AXSM-1-9953-XG, and AXSM-8-622-XG cards. For more information in the APS connector and how to install it, refer to the *Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.2.*

Note The APS connector that fits into an MGX 8850 (PXM45) switch is different from the APS connector that fits into an MGX 8950 switch. Refer to the *Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.2* to ensure that you have the correct APS connector installed.

Step 1 Establish a configuration session using a user name with GROUP1_GP privileges or higher.

Step 2 If you have not done so already, add card redundancy as described in the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Step 3 If you have not done so already, bring up the working line as described in "Bringing Up Lines."

Step 4 Enter the **dspapsbkplane** command on both the standby and active cards to verify that the APS connector is installed properly.

Note This command can show different values for each of the two cards, which indicates that the APS connector is seated properly on one card, but not on the other.

Step 5 Enter the **addapsln** command as follows:

```
addapsln <workingIndex> <protectIndex> <archmode>
```

Replace <*workingIndex*> with the location of the working line using the format *slot.bay.line*. Replace <*protectIndex*> with the location of the protection line, using the same format.

Note For intercard redundancy, the working index and protection index must specify the same line numbers on different cards. Also, the working line index must identify a line on the primary card.

Replace <*archmode*> with an option number that defines the type of line redundancy you want to use. Table 2-6 shows the option numbers and the types of redundancy they select.

In the following example, 1+1 APS redundancy is assigned to lines on two different cards:

```
pop20one.1.AXSM.a > addapsln 1.1.2 2.1.2 1
```

Step 6 To display a list of all the APS lines on an AXSM card, enter the **dspapslns** command.

Step 7 To display information on a specific APS line, enter the **dspapsln** <*slot.bay.line*> command on the active AXSM card.

For information on managing redundant APS lines, refer to Chapter 13, "Switch Operating Procedures," in the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Channelizing SONET, SDH, and DS3 (T3) Lines into Paths

This section describes the basic channelization procedure for channelizing SONET, SDH, or DS3 paths on AXSM-XG cards that support channelization. It includes the following sections:

- Overview of Channelization on an AXSM-XG Card

Overview of Channelization on an AXSM-XG Card

AXSM-XG cards support clear channel services and channelized lines. If a line is not channelized, it is said to be a *clear channel* line, and the full bandwidth of that line is dedicated to a single channel or *path*. When a line is channelized, it is logically divided into smaller bandwidth channels called paths. The following table summarizes channelization capabilities by card:

Table 2-7 Line Channelization

Line Type	SONET Channelization
OC-192/STM-64	None supported
OC-48/STM-16	STS-12, STS-3, DS3
OC-12/STM-4	STS-3 and DS3
OC-3/STM-1	None supported

A SONET synchronous transport signal (STS) is an electrical signal that gets combined with other electrical signals before being transported over an optical line. An STS-3 path has the same bandwidth as an OC-3 line, but it is not labeled with the OC rating if it is merely a path within a higher bandwidth line. For example, you can configure up to 16 STS-3 width paths in an OC-48 line. A synchronous transport module (STM) signal is the SDH equivalent of the SONET STS.

When a line is brought up initially, there is one path with. On a SONET line, a path width of **3** indicates that the line contains one clear channel STS-3 path. On an SDH line, a path width of **3** indicates that the line contains one clear channel STM-1/AU-4.

Channelizing a Line

The channelization feature allows you to create a simple or complex combination of paths for each line on your AXSM-XG back card. The simplest approach assigns the same bandwidth to each path. A more complex approach creates different path widths within the same SONET/SDH/T3 line. Depending on the type of line being channelized and the channelization scheme used, different types of paths are created.

Note The CLI shows SONET naming conventions in place of their equivalent SDH terms. For example, the display for SDH AU paths shows "STS", the display for VC/TU paths shows "VT".

Because paths support both ATM and DS3 payloads, you need to specify which payload type will travel over each path, and you may want to configure additional options for DS3 paths. Table 2-8 shows the channel payloads that are supported by each interface type.

Table 2-8 Channlized Interface Mapping

Path/Interface Type	Possible Channel Payloads
STS-1	• DS3 • ATM

You can assign ATM service to any level path down to DS3. The ATM service is carried on an STS-3 down to *n*xDS3 (IMA), where *n* is the number of configured DS3s. See the "Adding ATM Ports" section on page 3-27 to configure ATM service to a DS3 line.

Keep the following in mind when configuring paths on a channelized line:

- You can not configure channelization on a line that is already carrying active paths. Before you can configure a previously channelized line, you must bring down all previously configured paths on that line with the **dnpath** command.
- You can not configure a channelized line to be in clear channel mode if it is carrying active paths. Before you can configure a channelized line to be clear channel, you must bring down all previously configured paths on that line with the **dnpath** command.
- The sum of the bandwidths on the provisioned physical interfaces can not exceed the total bandwidth of the physical line (OC3 or DS3).
- A single STS-1 or AU-3 can carry one E3 or one DS3 (T3).
- All tributaries within an AU-3 (or TUG-3 within AU-4) must be the same size: either VC-11/TU-11 or VC-12/TU-12.
- A single TUG-3 in an AU-4 can carry 21E1s, 28 T1s, one E3, or one T3.
- A single AU-4 can carry 84 T1s, 63 E1s, 3 T3s, or 3 E3s.
- You can not map channelized DS3 lines or paths into VC3/TU-3s, TUG-3s, or AU-4s.
- A single STS-1 will carry one E3 or one T3.
- After a line is channelized, all the paths are initially down. To use a channel:
  - Enter the **uppath** command to bring up the paths you want to configure.
  - Then enter the **cnfpath** command to configure them. The **cnfpath** command parameters are different, depending on the type of path you are configuring. Take care to only use the parameters that are valid for the path type you are configuring.

    Table 2-9 describes the possible **cnfpath** command parameters for all path types.

Table 2-9 cnfpath Command Parameters

Parameter	Description
path type	Keyword that specifies the type of path you are configuring. Possible path types are: • **-sts**: sts/au path • **-ds3**: ds3 path
path_num	Identifies the path you want to configure. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.
width_spec	Specifies the width of the path. Possible values are: • 1 = sts1_stm0 • 3 = sts3c_stm1 • 12 = sts12c_stm4 • 48 = sts48c_stm16 • 192 = sts192c_stm64
sts_au_payload_type	Specifies the payload type. Possible values are: • atm • ds3 **Note** If you select ds3, you must set the width to sts1_stm0. DS3 automatically carries ATM.
trace-string	For SONET/SDH and E3 paths, this option allows you to transmit and display trail trace bytes. You can test the line by transmitting a group of numbers using **cnfln -txtrace** and then displaying the result using the **dshpln** command to see if the numbers are the same. Enter the keyword (**-txtrace**) followed by the *TraceString*. Possible values are: • On SDH, the *TraceString* is a number that can be a maximum of 15 bytes. • ON SONET lines, the *TraceString* is a number that can be a maximum of 62 bytes.
AIScBitsCheck	For DS3 paths, this option specifies whether to ignore or check the AIS C-bit. • 1–Chk C-bit • 2–Ignore C-bit
plcp_spec	For DS3 paths, enables or disable PLCP. • 1–enable • 2–disable

Channelization in SDH Networks Versus SONET Networks

SONET networks and SDH networks use different terminology to describe the same elements in a channelized line. Table 2-10 lists the SONET terms and their equivalent SDH terms.

Table 2-10 SONET Terminology versus SDH Terminology

SONET term	Equivalent SDH Term
STS-3	STM-1/AU-4
VT	Tributary Unit (TU) or Virtual Containers (VC).
VTG	TUG
VT 1.5	TU-11
VT 2.0	TU-12

SONET path and interface numbering is different from SDH path and interface numbering. Table 2-11 defines the interface and path numbering for SONET and T3 lines, and Table 2-12 defines the interface and path numbering for SDH lines.

Table 2-11 Interface Numbering in SONET Networks

SONET Path Type	Path Number
STS paths	*bay.line.sts*
DS3(T3)/E3 paths	*bay.line.ds3*

Table 2-12 Interface Numbering in SDH Networks

SDH Path Type	Path Number
AU paths	*bay.line.AU*
DS3(T3)/E3 paths	*bay.line.ds3*

Note The term “DS3” is used for both T3 and E3 lines.

Note The *bay* is always 1.

Tip Enter the **dsppaths -all** command to see the path identifies for all paths on the current card.

Channelizing a SONET Line

When a SONET line is in clear channel mode, it carries a single STS-3 path.

To channelize a SONET line into three STS-1 paths, perform the following steps.

Step 1 Establish a configuration session using a user name with GROUP1_GP privileges or higher.

Step 2 Enter the **cc** command to change to the card you want to configure.

Step 3 If you have not done so already, bring up the line to be configured as described in the "Bringing Up Lines" section, which appears earlier in this chapter.

Step 4 Enter the **dsppaths -all** command to see the path ID numbers for all STS-1 paths on the current card, and obtain the path ID for the path you want to channelize.

```
M8950_DC.16.AXSMXG.a > dsppaths -all

              path     Admin     path       path      path      Oper
   path       Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
       1.1.1     sts    Down   unequipped      48    Unknown        Down
    Shelf Database table empty.Ds3PathsTable
```

Step 5 Enter the **cnfpath -sts** <*path_id*> **-width 1** command to set the path width. Although this command has many options, you must channelize the line before you bring up and configure individual paths. The command form that channelizes the line is as follows:

cnfpath -sts <*path_id*> **-width** ***1***

Replace the *path_id* variable with the complete path number in the format *bay.line.sts, as* shown in Table 2-9.

Step 6 Enter the **dsppaths -sts** command to verify that the line has been channelized into three separate STS paths, as shown in the following example.

```
M8950_DC.16.AXSMXG.a > dsppaths -sts

              path     Admin     path       path      path      Oper
   path       Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
       1.1.1     sts    Down   unequipped      12    Unknown        Down
      1.1.13     sts    Down   unequipped      12    Unknown        Down
      1.1.25     sts    Down   unequipped      12    Unknown        Down
      1.1.37     sts    Down   unequipped      12    Unknown        Down

M8950_DC.16.AXSMXG.a >
```

Note The software supports only the path widths described in Table 2-9. When you create a path by dividing a larger path or combining smaller paths, the software may automatically create additional paths to assure that all the available bandwidth is assigned to one of the available path sizes.

Note To change the path width on a line that has already been configured to support a path width of 1, enter the **dnpath** **-sts** <*path_id*> command to bring down the path, and then enter the **cnfpath** **-sts** <*path_id*> **-width 3**. Note that all sub-paths must be in a down state before you can bring down a parent path.

Bringing Up and Configuring SONET Paths

After you split a SONET line into multiple paths, you are ready to bring up the individual paths. You must bring up the individual path or paths before you can assign a payload to that path and proceed with further channelization. Once you assign a payload to a path, the path is channelized into separate paths.

The following procedures describe how to bring up and configure the path when a single DS3 path is created and put in a DOWN state.

To bring up and configure a SONET path, perform the following steps.

Step 1 Establish a configuration session using a user name with GROUP1_GP privileges or higher.

Step 2 Enter the **cc** command to change to the AXSM-XG card you want to configure.

Step 3 If you have not done so already, channelize the line as described in the previous section, "Channelizing a SONET Line"

Step 4 Enter the **dsppaths -sts** command to see the path ID numbers for all STS-1 paths on the current card, and obtain the path ID for the path you want to channelize.

```
M8950_DC.16.AXSMXG.a > dsppaths -sts

             path     Admin     path       path      path      Oper
   path      Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
       1.1.1     sts     Down   unequipped      12    Unknown        Down
      1.1.13     sts     Down   unequipped      12    Unknown        Down
      1.1.25     sts     Down   unequipped      12    Unknown        Down
      1.1.37     sts     Down   unequipped      12    Unknown        Down

M8950_DC.16.AXSMXG.a >
```

Step 5 Bring up the path with the **uppath** -sts <*path num*> command, as shown in the following example.

```
M8950_DC.16.AXSMXG.a > uppath -sts 1.1.1
M8950_DC.16.AXSMXG.a > dsppaths -all

             path     Admin     path       path      path      Oper
   path      Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
       1.1.1     sts       Up          atm      12   Critical        Down
      1.1.13     sts     Down   unequipped      12    Unknown        Down
      1.1.25     sts     Down   unequipped      12    Unknown        Down
      1.1.37     sts     Down   unequipped      12    Unknown        Down
    Shelf Database table empty.Ds3PathsTable

M8950_DC.16.AXSMXG.a >
```

Step 6 Enter the **cnfpath -sts** <*path_id*> **-payload** <*sts_au_payload_type*> command to set the payload type for the path. The possible payload types for the paths you can create are described in Table 2-9. Be sure to set the payload to a type that is appropriate to the path type you are channelizing.

The following example shows how to configure a path with a payload:

```
M8950_DC.16.AXSMXG.a > cnfpath -sts 1.1.1 -payload atm
```

```
M8950_DC.16.AXSMXG.a > dsppaths -all

             path     Admin     path       path      path      Oper
   path      Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
      1.1.1     sts       Up          atm      12   Critical        Down
     1.1.13     sts     Down   unequipped      12    Unknown        Down
     1.1.25     sts     Down   unequipped      12    Unknown        Down
     1.1.37     sts     Down   unequipped      12    Unknown        Down
    Shelf Database table empty.Ds3PathsTable

M8950_DC.16.AXSMXG.a >
```

Step 7 To display the status of a path you have brought up, enter the **dsppath** command as follows:

```
M8950_DC.16.AXSMXG.a > dsppath 1.1.1
  Path Number            : 1.1.1            Path Type           : sts
  Payload                : atm              Width               : 12
  Admin Status           : Up               Alarm Status        : Critical
  Path Operational State : Down
  Number of ports        : 0                Number of partitions: 0
  Number of SPVC         : 0                Number of SPVP      : 0
  Number of SVC          : 0
  Xmt.Trace              :

M8950_DC.16.AXSMXG.a >
```

When the path is up, the Admin Status row displays *Up*. The Payload row displays the payload type (atm).

Step 8 Bring up and configure the paths you created in Step 5. Refer to the "Channelizing a Line" section on page 2-18 for instructions on bringing up and configuring DS3 paths.

Channelizing an SDH Line

When an SDH line is in clear channel mode, it carries a single STS path. You can channelize the STS path into multiple separate STS paths.

Note STM/AU paths on SDH lines are equivalent to STS paths on SONET lines. The Release 5 CLI shows SONET naming conventions in the place of their equivalent SDH terms. Note that in the channelization CLI, the STM/AU paths are called "STS" paths.

To channelize an SDH line into four separate DS3 paths, perform the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1_GP privileges or higher.

Step 2 Enter the **cc** command to change to the AXSM-XG card you want to configure.

Step 3 If you have not done so already, bring up the line to be configured as described in the "Bringing Up Lines" section, which appears earlier in this chapter. Once a line is brought up, a single STS path is created and put in a down state.

Step 4 Enter the **dsppaths -all** command to ensure that an STS path has been created, and to obtain the *path_id* for the path.

```
M8950_DC.16.AXSMXG.a > dsppaths -all
```

```
              path     Admin     path       path      path      Oper
   path       Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
       1.1.1     sts     Down   unequipped      48    Unknown        Down
    Shelf Database table empty.Ds3PathsTable
```

If want to channelize the STS path into smaller paths, proceed to Step 5. If you want to channelize the STS path into clear channel DS3 paths, skip the rest of the steps in this section and follow the procedure in the "Bringing Up and Configuring SDH Paths" section on page 2-25.

Step 5 Enter the **cnfpath -sts** <*path_id*> **-width 1** command to set the path width. Although this command has many options, you must channelize the line before you bring up and configure individual paths. The command form that channelizes the line is as follows:

```
M8950_DC.16.AXSMXG.a > cnfpath -sts 1.1.1 -width 12
Change in path width may cause traffic loss.
Do you want to proceed (Yes/No) ? y

M8950_DC.16.AXSMXG.a >
```

Replace the *path_id* variable with the complete path number in the format *bay.line.sts, as* shown in Table 2-9. The correct path number for unchannelized SDH line 1 on an MPSM-T3E3-155 card is 1.1.0.

The AXSM XG card supports two path widths, depending on the size of the AXSM XG initial path width:

- 1:STS1_STM0
- 3:STS3c_STM1
- 12:STS12c_STM4
- 48:STS48c_STM16
- 192:sts192c_stm64

Step 6 Enter the **dsppaths -sts** command to verify that the line has been channelized into three separate SDH paths, as shown in the following example.

```
M8950_DC.16.AXSMXG.a > dsppaths -sts

              path     Admin     path       path      path      Oper
   path       Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
       1.1.1     sts     Down   unequipped      12    Unknown        Down
      1.1.13     sts     Down   unequipped      12    Unknown        Down
      1.1.25     sts     Down   unequipped      12    Unknown        Down
      1.1.37     sts     Down   unequipped      12    Unknown        Down

M8950_DC.16.AXSMXG.a >
```

Note The software supports only the path widths described in Table 2-9. When you create a path by dividing a larger path or combining smaller paths, the software may automatically create additional paths to assure that all the available bandwidth is assigned to one of the available path sizes.

Note To change the path width on a line that has already been configured to support a path width of 1, enter the **dnpath -sts** <*path_id*> command to bring down the path, and then enter the **cnfpath -sts** <*path_id*> **-width 3**. Note that all sub-paths must be in a down state before you can bring down a parent path.

Bringing Up and Configuring SDH Paths

After you split an SDH line into multiple paths, you are ready to bring up the individual paths. You must bring up the individual path or paths before you can assign a payload to that path and proceed with further channelization. Once you assign a payload to a path, the path is channelized into separate paths

To bring up and configure a SDH path, perform the following steps.

Step 1 Establish a configuration session using a user name with GROUP1_GP privileges or higher.

Step 2 Enter the **cc** command to change to the AXSM-XG card you want to configure.

Step 3 If you have not done so already, channelize the line as described in the previous section, "Channelizing an SDH Line"

Step 4 Enter the **dsppaths -sts** command to see the path ID numbers for all STS-1/STM-0 paths on the current card, and obtain the path ID for the path you want to channelize.

Step 5 Bring up the path with the **uppath** -sts <*path num*> command as shown in the following example.

```
M8950_DC.16.AXSMXG.a > uppath -sts 1.1.1
M8950_DC.16.AXSMXG.a > dsppaths -all

              path     Admin     path       path      path      Oper
   path       Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
       1.1.1     sts       Up          atm      12   Critical        Down
      1.1.13     sts     Down   unequipped      12    Unknown        Down
      1.1.25     sts     Down   unequipped      12    Unknown        Down
      1.1.37     sts     Down   unequipped      12    Unknown        Down
    Shelf Database table empty.Ds3PathsTable

M8950_DC.16.AXSMXG.a >
```

Step 6 Enter the **cnfpath -sts** <*path_id*> **-payload** <*sts_au_payload_type*> command to set the payload type for the path. The possible payload types for the paths you can create are described in Table 2-9. Be sure to set the payload to a type that is appropriate to the path type you are channelizing.

The following example shows how to configure a path with a payload:

```
M8950_DC.16.AXSMXG.a > cnfpath -sts 1.1.1 -payload atm

M8950_DC.16.AXSMXG.a > dsppaths -all

              path     Admin     path       path      path      Oper
   path       Type     Status    Payload    Width     Alarm     State
 ----------- -------  --------  ---------  --------  -------  ----------
       1.1.1     sts       Up          atm      12   Critical        Down
      1.1.13     sts     Down   unequipped      12    Unknown        Down
      1.1.25     sts     Down   unequipped      12    Unknown        Down
      1.1.37     sts     Down   unequipped      12    Unknown        Down
    Shelf Database table empty.Ds3PathsTable

M8950_DC.16.AXSMXG.a >
```

Step 7 To display the status of a path you have brought up, enter the **dsppath** command as follows:

```
M8950_DC.16.AXSMXG.a > dsppath 1.1.1
  Path Number            : 1.1.1            Path Type           : sts
  Payload                : atm              Width               : 12
  Admin Status           : Up               Alarm Status        : Critical
  Path Operational State : Down
  Number of ports        : 0                Number of partitions: 0
  Number of SPVC         : 0                Number of SPVP      : 0
  Number of SVC          : 0
  Xmt.Trace              :

M8950_DC.16.AXSMXG.a >
```

When the path is up, the Admin Status row displays *Up*. The Payload row displays the payload type (atm).

Step 8 Bring up and configure the rest of the paths shown in Step 5. Refer to the "Channelizing a Line" section on page 2-18.

CHAPTER 3

Provisioning ATM Services

This chapter describes how to configure the AXSM card and provides procedures for adding ATM ports and connections to the physical lines. The types of links and connections presented in this chapter are listed in Table 3-1.

Note Before you can configure any ATM connections, you must first complete the general switch configuration procedures described in *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*, and you must set up the AXSM cards and lines as described in Chapter 2, "Preparing AXSM Lines for Communication."

Table 3-1 AXSM Link and Connection Types

AXSM Link or Connection Type	Description	Section
MPLS and PNNI trunks	PNNI trunks connect Cisco MGX switches to other Cisco MGX switches.	"MPLS and PNNI Trunk Configuration Quickstart" section on page 3-3
MPLS and PNNI UNI ports	PNNI UNI ports connect Cisco MGX switches to CPE.	"MPLS and PNNI UNI Port Configuration Quickstart" section on page 3-5
Switched Virtual Circuits (SVCs)	SVCs are temporary connections that are brought up and torn down upon request from CPE.	"SVC Configuration Quickstart" section on page 3-7
Soft Permanent Virtual Circuits (SPVCs)	SPVCs are permanent connections that can be rerouted if a link fails.	"SPVC and SPVP Configuration Quickstart" section on page 3-8
PNNI virtual trunks	PNNI virtual trunks are used to traverse public networks. The virtual trunk endpoints are on separate networks, but the path between the networks is treated like a single link.	"PNNI Virtual Trunk Configuration Quickstart" section on page 3-9
Extended Permanent Virtual Connections (XPVCs) and Extended Permanent Virtual Paths (XPVPs)	An XPVC/XPVP is basically an SPVC/SPVP that connects a PNNI network to an AutoRoute network. XPVCs and XPVPs span over AutoRoute-to-PNNI or AutoRoute-to-PNNI-to-AutoRoute hybrid networks.	"XPVC and XPVP Configuration Quickstart" section on page 3-13
Inverse Multiplexing over ATM (IMA)	Inverse Multiplexing over ATM (IMA) is a protocol that runs on the AXSM-32-T1E1-E. IMA allows you to combine multiple T1 or E1 interfaces into a single, high-speed IMA interface.	"Managing IMA Groups" section on page 4-55

Table 3-1 AXSM Link and Connection Types (continued)

AXSM Link or Connection Type	Description	Section
Channelized paths	Channelization is possible on AXSM-XG cards. Channelization makes it possible to implement multiple SONET or SDH paths on a single line. It also makes it possible to implement multiple DS3 paths on a single SONET path.	"Channelizing SONET Lines Configuration Quickstart" section on page 2-4 "Channelizing SONET Lines Configuration Quickstart" section on page 2-4 "Channelizing SDH Lines Configuration Quickstart" section on page 2-5
Feeder trunks	Feeder trunks link a feeder switch to a Cisco MGX 8850 (PXM45) switch. The feeder switch concatenates relatively low speed traffic and feeds it over a higher speed interface to the Cisco MGX 8850 switch, which provide the link to the ATM network core. Feeder switches include: • Cisco MGX 8230 • Cisco MGX 8250 • Cisco MGX 8850 (PXM1E) • Cisco IGX switches	"Cisco IGX Feeder to Cisco MGX 8850 Configuration Quickstart" section on page 3-14 "PXM1 Feeder Configuration Quickstart" section on page 3-16
Cisco BPX PNNI trunks	Cisco BPX PNNI trunks provide PNNI links between Cisco MGX 8850 (PXM45) and Cisco MGX 8950 and Cisco BPX switches that support PNNI. The Cisco BPX switch supports PNNI when connected to the Cisco SES PNNI Controller.	"Cisco BPX PNNI Trunk Configuration Quickstart" section on page 3-18
ATM Inter-Network Interface (AINI) links	AINI links enable connectivity between two independent PNNI networks and block the PNNI database exchange so the two networks remain independent.	"AINI Link Configuration Quickstart" section on page 3-20
Interim Inter-switch Protocol (IISP) links	IISP links enable connectivity between two independent PNNI networks and block the PNNI database exchange so the two networks remain independent. IISP is the predecessor to AINI and should be used only when AINI is not supported on one or both ends of the network link.	"IISP Link Configuration Quickstart" section on page 3-22
Extended Link Management Interface (XLMI) links	XLMI links connect PNNI networks to AutoRoute networks. XLMI links enable the expansion of AutoRoute networks using PNNI, and they facilitate migration from AutoRoute networking to PNNI.	"XLMI Link Configuration Quickstart" section on page 3-24
Point-to-Multipoint SPVCs and SPVPs	Point-to-multipoint (P2MP) connections enable a single master endpoint to support several slave endpoints.	"Configuring Point-to-Multipoint SPVCs and SPVPs" section on page 3-61

Tip You can get configuration information for any command by entering the command without parameters in the CLI.

Quickstart Provisioning Procedures

The sections that follow present abbreviated procedures that you can use to configure lines and provision connections. To do the procedures in this section, you must start a CLI session on the appropriate AXSM card by logging in with the appropriate username and password. For detailed information about user names, passwords, and logging into the CLI, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Note The procedures in this chapter require you to log in as a user with GROUP1 privileges or higher.

MPLS and PNNI Trunk Configuration Quickstart

The following quickstart procedure summarizes how to configure an ATM trunk with MPLS and PNNI partitions. An ATM trunk is a Network-to-Network Interface (NNI) that connects switches in the core of the network.

This procedure must be completed on the switches at both ends of the trunk. After you configure an ATM trunk, the trunk is ready to support SVCs, SPVCs, and SPVPs. (See the "SVC Configuration Quickstart" section on page 3-7 or "SPVC and SPVP Configuration Quickstart" section on page 3-8 for more details.)

Note The trunk configuration is not complete until the following procedure has been completed on the switches at both ends of the trunk.

	Command	Comments
Step 1	*username* <*password*>	Start a configuration session. To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	**cc**	Change to an AXSM card.
Step 3	Follow the steps in the "Preparing AXSM Lines for Communication" section on page 2-1	Bring up AXSM lines.

	Command	Comments
Step 4	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure ATM ports. This step establishes ATM communications between two ATM devices. Specify **NNI** for interswitch trunks. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 5	**cnfport** Related commands: **dspports** **dspports**	Use this optional step if you need to make changes to the port created in the previous step. For more information on modifying ports, see the "Adding ATM Ports" section on page 3-27.
Step 6	**cnfpart** Related commands: **dspparts** **dsppart**	Configure trunk resources to PNNI and MPLS controllers. This step can assign all the trunk bandwidth to one controller, or it can assign portions of the trunk bandwidth to each controller. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 7	**cc**	Change to the PXM card.
Step 8	**dnpnport** **cnfpnportsig** **uppnport** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Define the signaling protocol used on the trunk. Specify **pnni10** for PNNI trunks. See the "Selecting the Port Signaling Protocol" section on page 3-44. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.
Step 9		Configure the other end of the link. If the other end of the link is connected to another AXSM card, repeat Step 1 through Step 8. If the other end of the link is on a different card type, refer the documentation for that card.

	Command	Comments
Step 10	**cc** **dsppnni-link** **dsppnni-neighbor**	When both ends of the link are configured, change to the active PXM card and verify the PNNI communications between the two ends of the connection. In the **dsppnni-link** report, there should be an entry for the port for which you are verifying communications. The Hello state reported should be twoWayInside, and the Remote node ID should display the remote node ATM address after the second colon. See the "Verifying PNNI Communications" section on page 4-52.
Step 11	**cc**	Change back to the AXSM card.
Step 12	**upilmi** **cnfilmi** Related commands: **dspports** **dspilmis**	This step is optional. Configure and start ILMI on trunks where you want to support Cisco WAN Manager (CWM) or use ILMI features. See the "Configuring ILMI on a Port" section on page 3-47.

MPLS and PNNI UNI Port Configuration Quickstart

ATM User-to-Network Interface (UNI) ports connect the switch to ATM end devices, which serve as the boundary between the ATM network and other communications paths or networks. Typical end devices include ATM routers and multiservice concentrators. UNI signaling is used between the end system (CPE) and the PNNI network for requesting calls.

The quickstart procedure in this section provides a summary of the tasks required to configure UNI ports on AXSM cards. This procedure is provided as an overview and as a quick reference for those who have previously configured UNI ports.

	Command	Comments
Step 1	*username* <*password*>	Start a configuration session. To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	**cc**	Change to the AXSM card.
Step 3		Bring up AXSM lines as described in the "Preparing AXSM Lines for Communication" section on page 2-1

	Command	Comments
Step 4	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure ATM ports. This step establishes ATM communications between two ATM devices. Specify **UNI** for ATM lines. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 5	**cnfport** Related commands: **dspport** **dspports**	Use this optional step if you need to make changes to the port created in the previous step. For more details on modifying ports, see the "Adding ATM Ports" section on page 3-27.
Step 6	**cnfpart** Related commands: **dsppart** **dspparts**	Configure the trunk resources that are assigned to the PNNI and MPLS controllers. This step can assign all the line bandwidth to one controller, or it can assign portions of the line bandwidth to each controller. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 7	**cc**	Change to the PXM card.
Step 8	**dnpnport** *<portid>*	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.
Step 9	**cnfpnportsig** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Define the signaling protocol used on the line. Specify **uni30**, **uni31**, or **uni40**. See the "Selecting the Port Signaling Protocol" section on page 3-44.

	Command	Comments
Step 10	**cnfaddrreg** **addaddr** Related commands: **dsppnports** **dspatmaddr** **deladdr**	Configure static ATM addresses for ports that require them. See the "Assigning Static ATM Addresses to Destination Ports" section on page 3-46.
Step 11	**addprfx** Related commands: **cnfaddrreg** **dspprfx**	If dynamic addressing is to be used on a port, define an ATM address prefix that ILMI can use when assigning addresses. See the "Configuring ILMI Dynamic Addressing" section on page 3-50.
Step 12	**uppnport**	Bring up the port after configuration is complete.
Step 13	**cc**	Change back to the AXSM card.
Step 14	**upilmi** **cnfilmi** Related commands: **dspports** **dspilmis**	Configure and start ILMI on the port. This step is required for dynamic addressing and the ILMI automatic configuration feature. Otherwise, it is optional. See the "Configuring ILMI on a Port" section on page 3-47.

SVC Configuration Quickstart

Switched virtual circuits (SVCs) are the solution for on-demand connections. They are set up as needed and torn down when no longer needed. To enable this dynamic activity, SVCs use signaling. End systems request connectivity to other end systems and, provided that the requested services are available, the connection is set up at the time of the request. When idle, an SVC is taken down to save network bandwidth.

Cisco MGX 8850 (PXM45) and Cisco MGX 8950 can use the PNNI protocol to determine how to set up SVCs through the network. Because the switch automatically sets up SVCs, you do not have to configure SVC routes. However, the switch must be configured correctly before it can set up SVCs.

The following quickstart procedure summarizes the tasks required to enable SVC communications. With the exception of CPE configuration, all these tasks are described in this chapter.

Note The tasks in the following procedure do not have to be completed in the order presented. However, all tasks must be completed before SVCs will operate.

	Command	Comments
Step 1	Follow the steps in the "MPLS and PNNI Trunk Configuration Quickstart" section on page 3-3.	Configure the trunks that link the switches through which the ATM end stations connect. Be sure to add the appropriate controller (either PNNI or MPLS) on each switch and select that controller when partitioning trunks.
Step 2	**dsppnni-reachable-addr network**	On the PXM, verify connectivity between the node pairs that will host SVCs. See the "Verifying PNNI Communications" section on page 4-52.
Step 3	Follow the steps in the "MPLS and PNNI UNI Port Configuration Quickstart" section on page 3-5.	Configure UNI ports for the ATM end stations at each end of the SVC, and assign either static or dynamic addressing to each line. Be sure to add the appropriate controller (either PNNI or MPLS) on each switch and select that controller when partitioning trunks.
Step 4	See the CPE documentation.	Configure CPE devices for communications with the switch through the UNI ports configured in the previous step.
Step 5	**dsppncons**	This optional step displays the SVC connections that are operating. Enter the **dsppncons** command on the active PXM.

It is beyond the scope of this guide to describe how to configure each model of CPE to communicate with the switch. To complete this configuration, you will need to learn the capabilities of the CPE and the switch and define a set of communications parameters that are supported by both devices. For example, the Cisco MGX 8850 (PXM45) switches support UNI 3.1 communications, but if the CPE does not, you must select a signaling protocol (such as UNI 3.0) that is supported by both devices.

After all requirements have been met for SVC connections, CPE devices can establish SVC connections to other CPE devices on the same switched network.

SPVC and SPVP Configuration Quickstart

A soft permanent virtual circuit (SPVC) is a permanent virtual circuit (PVC) that can be rerouted using the Private Network-to-Network Interface (PNNI) Version 1.0 protocol. SPVCs are full-time connections. Using the PNNI protocol, SPVCs can be rerouted to avoid failed communication links or to use links that offer better bandwidth.

The difference between an SPVC and a soft permanent virtual path (SPVP) is that the SPVP supports multiple virtual circuits, whereas a SPVC is by definition a single virtual circuit. As with SPVCs, when an SPVP fails, PNNI can determine if an alternate route exists and reroute the connection.

The following quickstart procedure provides a summary of the tasks required to configure SPVCs and/or SPVPs on AXSM cards. This procedure is provided as an overview and as a quick reference for those who have previously configured these types of connections.

	Command	Comments
Step 1	Follow the steps in the “MPLS and PNNI Trunk Configuration Quickstart” section on page 3-3.	Configure the trunks that link the switches through which the ATM end stations connect. Be sure to add the appropriate controller (either PNNI or MPLS) on each switch and select that controller when partitioning trunks.
Step 2	**dsppnni-reachable-addr network**	On the PXM, verify connectivity between the node pairs that will host SVCs. See the “Verifying PNNI Communications” section on page 4-52.
Step 3	Follow the steps in the “MPLS and PNNI UNI Port Configuration Quickstart” section on page 3-5.	Configure UNI ports for the ATM end stations at each end of the SVC, and assign either static or dynamic addressing to each line. Be sure to add the appropriate controller (either PNNI or MPLS) on each switch and select that controller when partitioning trunks.
Step 4	**cc**	Change to the AXSM card.
Step 5	**addcon** Related commands: **dspchans** **dspchan**	If you are configuring a double-ended SPVC, configure the slave side of the SPVC or SPVP. If the slave side of the connection is on the AXSM card, see the “Configuring the Slave Side of SPVCs and SPVPs” section on page 3-55. If the slave side of the connection is on a non- AXSM card, refer to the documentation for that card. **Note** If you are configuring a single-ended SPVC or SPVP, you do not need to configure the slave end of the SPVC or SPVP.
Step 6	**dspcon**	Verify the configuration for the connection you added inStep 5 Step 5.
Step 7	*username* <*password*> or **cc**	If you are configuring an SPVC or SPVP between: • The AXSM and a remote card, change to the remote card. • Two ports on the current AXSM card, you can skip this step and proceed to Step 8.
Step 8	**addcon** Related commands: **dspcon** **dspcons**	Add and configure the master side of an SPVC or SPVP on the remote card. If the master side of the connection is on: • The AXSM card, see the “Configuring SPVCs and SPVPs” section on page 3-54. • A non- AXSM card, refer to the documentation for that card.
Step 9	**dsppncons**	This optional step displays the SVC connections that are operating. Enter this command on the active PXM.

PNNI Virtual Trunk Configuration Quickstart

Virtual trunks are introduced and explained in the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

To set up a virtual trunk, as shown in Figure 3-1, the following tasks have to be completed:

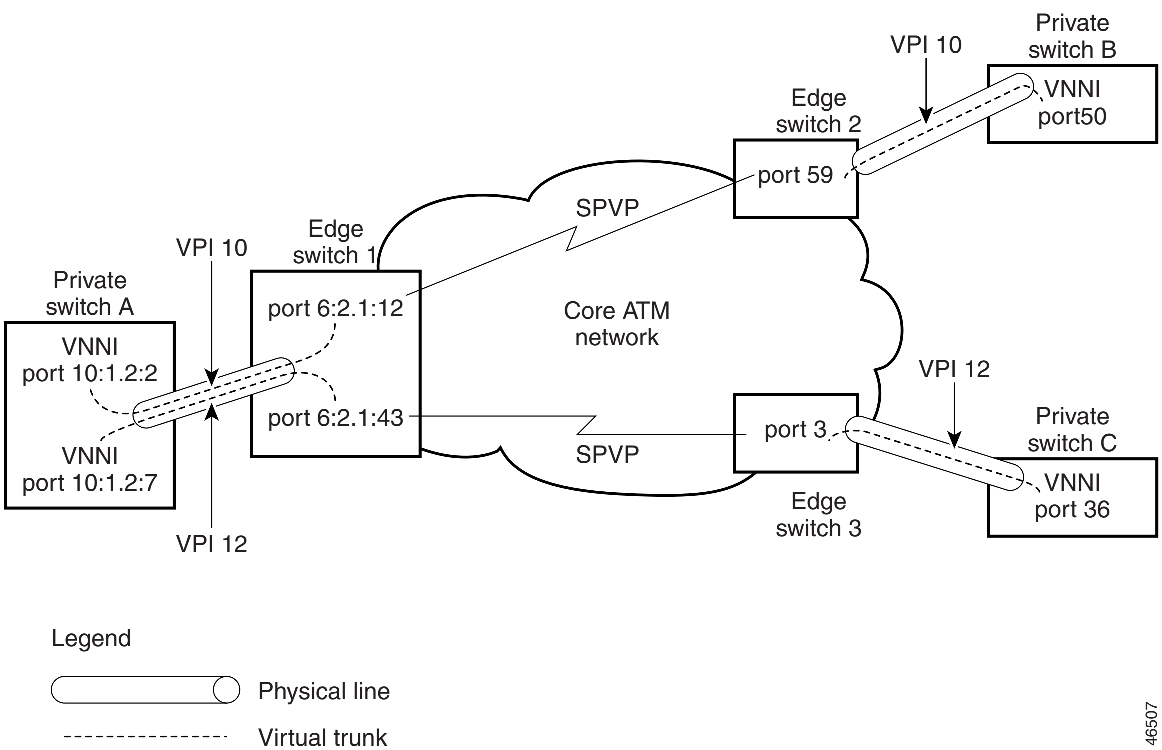
- Virtual trunks must be defined between the private network nodes and the core edge nodes.
- The core network operators must define an SPVP for each virtual trunk that connects the core edge nodes on the virtual trunk path.

The Cisco MGX 8850 (PXM45) and Cisco MGX 8950 support:

- Up to 256 SPVPs across an ATM core network (or ATM cloud). The range is from 0 to 255.
- Up to 60 virtual trunks on a physical interface with a total of 60 per AXSM card and 100 ports per switch.

Note As shown in Figure 3-1, single trunk between Private Switch A and Edge Switch A hosts two virtual trunks, which terminate at Virtual Network-to-Network Interface (VNNI) ports 10:1.2:2 and 10:1.2:7. The switch supports up to 256 VNNI ports on a UNI link and up to 4096 VNNI ports on an NNI link.

Figure 3-1 Virtual Trunk Configuration



The following procedure summarizes the tasks required to configure virtual trunks on AXSM cards.

	Command	Comments
Step 1	username <password>	Start a configuration session. To perform all of the steps in this quickstart procedure, you must log in as a user with Group1 privileges or higher.
Step 2	**cc**	Change to the AXSM card.

	Command	Comments
Step 3	Add a channelized path: **upln** **cnfpath** **uppath** Related commands: **dsppath** **dsppaths**	*This step is for for AXSM-XG cards only.* Otherwise, skip to Step 4. Add, configure, and bring up a channelized path. Do this step only if you are configuring a virtual trunk on an AXSM-XG card. See the "Channelizing SONET, SDH, and DS3 (T3) Lines into Paths" section on page 2-17.
Step 4	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure the virtual trunk end ports at the private switches. This step establishes ATM communications between two ATM devices. Select interface type **3** for VNNI. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 5	**cnfpart** Related commands: **dspparts** **dsppart**	Configure trunk resources to PNNI and MPLS controllers. This step can assign all the trunk bandwidth to one controller, or it can assign portions of the trunk bandwidth to each controller. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 6	**cc**	Change to the PXM card.
Step 7	**dnpnport** <*portid*>	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.

	Command	Comments
Step 8	**cnfpnportsig** **uppnport** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Define the virtual trunk signaling at the private switches. Select PNNI signaling by setting the **-nniver** option to **pnni100**. See the "Selecting the Port Signaling Protocol" section on page 3-44.
Step 9	**cc**	Change back to the AXSM card.
Step 10	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure the virtual trunk end ports at each core edge node. Specify interface type **1** for UNI or **2** for NNI. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 11	**cnfpart** Related commands: **dspparts** **dsppart**	Configure the virtual trunk partitions at each core edge node. Use a VPI range that includes all VPI numbers set for virtual trunks on this line at the private switch. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 12	**cc**	Change to the PXM card.
Step 13	**dnpnport** <*portid*>	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.

	Command	Comments
Step 14	**cnfpnportsig** **uppnport** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Define the virtual trunk signaling at each core edge node. Select no trunk signaling by setting the **-univer** option (UNI ports) to **none** or the **-nniver** option (NNI ports) to **none**. See the "Selecting the Port Signaling Protocol" section on page 3-44.
Step 15	Follow the steps in the "Configuring SPVCs and SPVPs" section on page 3-54.	For each virtual trunk, configure an SPVP between the virtual trunk ports at each edge of the core network.
Step 16	**cc**	Change to the PXM card.
Step 17	**dsppnni-reachable-addr network**	Verify PNNI connectivity between the two nodes that will host the virtual trunk end points. See the "Verifying End-to-End PNNI Communications" section on page 4-54.

XPVC and XPVP Configuration Quickstart

AXSM/A, AXSM/B, and AXSM-XG cards support both an Extended Permanent Virtual Connection (XPVCs) and an Extended Permanent Virtual Paths (XPVPs). An XPVC/XPVP is basically an SPVC/SPVP that connects a PNNI network to an AutoRoute network.

XPVCs and XPVPs span over AutoRoute-PNNI or AutoRoute-PNNI-AutoRoute hybrid networks. Each XPVC/XPVP can contain up to five segments that support various combination pairs of Frame Relay, ATM, and RPM endpoints. Each XPVC/XPVP may contain feeder nodes such as the Cisco MGX 8220, Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1).

The UNI or NNI interface on each XPVC segment is enhanced and called either an Enhanced User-to-Network Interface (EUNI) or an Enhanced Network-to-Network Interface (ENNI). The EUNI/ENNI allows segment OAM loopback cells to start from an edge of the hybrid AutoRoute-PNNI network and traverse through the multiple XPVC segments.

Note Cisco recommends that you use the CWM application to set up multi-segment OAM loopback. The OAM segmentation capability supports fault isolation in the AutoRoute-PNNI network.

	Command	Comments
Step 1	Follow the steps in the "MPLS and PNNI Trunk Configuration Quickstart" section on page 3-3.	Configure the trunks that link the switches to which the ATM end stations connect.
Step 2	**dsppnni-reachable-addr network**	Verify PNNI connectivity between the two nodes that will host the XPVC or XPVP end points. See the "Verifying End-to-End PNNI Communications" section on page 4-54.

	Command	Comments
Step 3	Follow the steps in the "MPLS and PNNI UNI Port Configuration Quickstart" section on page 3-5.	Configure lines for the ATM end stations at each end of the XPVC or XPVP, and assign either static or dynamic addressing to each line.
Step 4	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure ATM ports. This step establishes ATM layer two communications between two ATM devices. Assign a service type of **evuni** or **evnni** to the port, and provide the **-minvpi** and -**maxvpi** for the XPVC/XPVP in one of the following ranges: • **evuni** – 0 through 255 • **evnni** – 0 through 4095 For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 5	**addcon** Related commands: **dspchans** **dspchan**	If you are configuring a double-ended XPVC/XPVP, configure the slave side of the XPVC/XPVP as you would an SPVC/SPVP. See the "Configuring SPVCs and SPVPs" section on page 3-54. **Note** Cisco MGX 8850 (PXM45) and Cisco MGX 8950 support single-ended SPVCs, so you do not need to configure that slave end of an SPVC.
Step 6	**addcon** Related commands: **dspchans** **dspchan**	Configure the master side of an XPVC/XPVP as you would an SPVC/SPVP. See the "Configuring SPVCs and SPVPs" section on page 3-54.

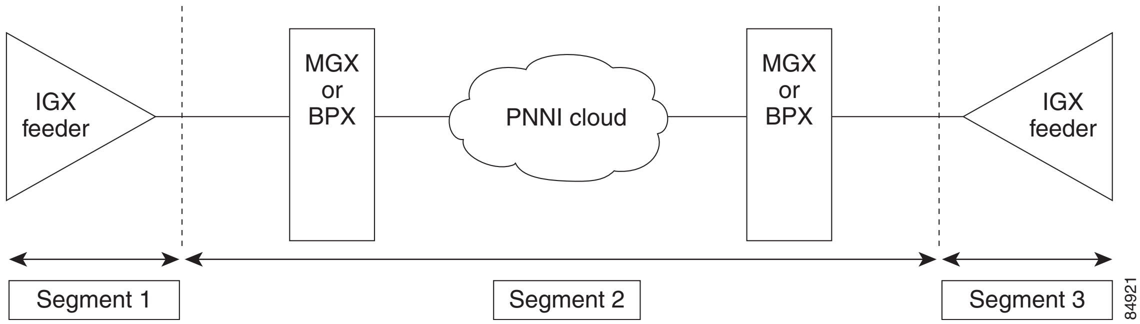
Cisco IGX Feeder to Cisco MGX 8850 Configuration Quickstart

A Cisco IGX node with a UXM card can be configured as a feeder to a Cisco MGX8850 switch, which can be configured as a routing node for the IGX feeder. The Cisco IGX feeder trunk interface on the UXM can connect to the AXSM, AXSM-E, or PXM1E of a Cisco MGX8850.

Note For a detailed description of IGX feeders, see the *Cisco IGX 8400 Series Provisioning Guide, Release 9.3.3*.

Figure 3-2 shows the IGX feeder topology.

Figure 3-2 IGX Feeder Topology



The following procedure summarizes how to configure a connection from an AXSM or AXSM-E card to an IGX feeder.

	Command	Comments
Step 1	Follow the steps in the "MPLS and PNNI Trunk Configuration Quickstart" section on page 3-3.	Create an interface between the IGX/UXM and MGX/AXSM.
Step 2	**addlmi**	On the AXSM, designate the interface as a feeder.
Step 3	**cc**	Change to the PXM card.
Step 4	**dnpnport** <*portid*>	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.

	Command	Comments
Step 5	**cnfpnportsig** **uppnport** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Set up the IP connectivity on the PXM controller card.
Step 6	IGX commands: **cnfswfunc** **uptrk** **cnftrk**	Configure the IGX switch as described in the appropriate IGX documentation. Relevant IGX commands are as follows: • **cnfswfunc**: make the IGX node a feeder • **uptrk**: create a standard trunk or an IMA trunk • **cnftrk**: configure the trunk **Note** Refer to the *Cisco WAN Switching Command Reference, Release 9.3.3* to see a description of the IGX commands.

PXM1 Feeder Configuration Quickstart

This procedure provides a summary of the tasks requiredto add a Cisco MGX 8850 (PXM1), Cisco MGX 8230 or Cisco MGX 8250 as a feeder to an AXSM card on a Cisco MGX 8850 (PXM45). Also, it provides an outline to add a connection.

Note The feeder trunk configuration is not complete until the Cisco MGX 8850 (PXM1), Cisco MGX 8230 or Cisco MGX 8250 feeder is also configured.

	Command	Comments
Step 1	username <password>	Start a configuration session. To perform all of the steps in this quickstart procedure, you must log in as a user with Group1 privileges or higher.
Step 2	**cc**	Change to the AXSM card.

	Command	Comments
Step 3	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Configure the local routing switch port that leads to the feeder. When configuring the line, select either interface type **1** (UNI) or **2** (NNI). Use the same interface type when defining the port on the feeder. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 4	**cnfpart** Related commands: **dspparts,** **dsppart**	Assign trunk resources to the PNNI controller ID, which is **2**. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 5	**cc**	Change to the PXM card.
Step 6	**dnpnport** <*portid*>	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.
Step 7	**cnfpnportsig** **cnfoamsegep no** **uppnport** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Define the signaling protocol used on the trunk. If CWM will be used to manage the feeder, enter the **cnfpnportsig** command to enable IP communications between the switch and the feeder. `MGX8850.7.PXM.a > cnfpnportsig <portid> -cntlvc ip` Use the **cnfoamsegep** command to define the local routing switch feeder port as a non-OAM segment endpoint. This is required to enable testing with the **tstdelay** command. See the "Selecting the Port Signaling Protocol" section on page 3-44.
Step 8	**cc**	Change back to the AXSM card.
Step 9	**addfdr** Related commands: **dspfdr**	Define the local routing switch port as a feeder port. See the "Defining a Feeder Port" section on page 3-58.

	Command	Comments
Step 10	Refer to the Cisco MGX 8850 PXM1-based documentation.	At the Cisco MGX 8850 PXM1-based feeder, enter the **addcon** command to add a connection on the link to the Cisco MGX 8850 (PXM45) switch.
Step 11	—	Configure the port on the remote routing switch that terminates calls in the core network. If the remote routing switch port connects to a feeder, repeat Steps 2 and 3 to configure the remote feeder trunk. If the remote routing switch port connects to CPE, configure the port for UNI communications.
Step 12	**cc**	Change to the PXM card.
Step 13	**cnfoamsegep**	Define the local routing switch feeder port as a non-OAM segment endpoint. This is required to enable testing with the **tstdelay** command.
Step 14	**cc**	Change back to the AXSM card.
Step 15	**addcon** Related commands: **dspcons**	Create an SPVC from the local routing switch feeder port to the remote routing switch termination port. See the "Configuring SPVCs and SPVPs" section on page 3-54.

Cisco BPX PNNI Trunk Configuration Quickstart

When the Cisco SES PNNI controller is attached to a Cisco BPX switch, the Cisco BPX switch can participate in a PNNI network with Cisco MGX 8850 (PXM45) and Cisco MGX 8950 switches. The connection between a Cisco MGX 8850 (PXM45) and Cisco MGX 8950 and a Cisco BPX switch is a trunk between an AXSM card in the Cisco MGX switch and a Cisco BXM card in the Cisco BPX switch.

For instructions on configuring the BXM end of the trunk, refer to the Cisco SES product documentation. This section describes how to configure the AXSM end of the trunk.

The procedure for configuring the AXSM end of the trunk is similar to the general procedure for configuring AXSM trunks. The following procedure is customized for setting up Cisco BPX PNNI trunks.

Note The trunk configuration is not complete until the BXM end of the trunk is configured.

Caution Before you can configure a BPX PNNI trunk, you must allocate PNNI resources. To verify that a PNNI resource is allocated on the trunk, enter the dsprsrc <slot.port> command on the active PXM.

Note After you configure a Cisco BPX PNNI trunk, the trunk is ready to support SVCs. You can also create SPVCs and SPVPs between CPE at each end of the trunk as described in the ""Configuring SPVCs and SPVPs" section on page 3-54,.

	Command	Comments
Step 1	username <password>	Start a configuration session. To perform all of the steps in this quickstart procedure, you must log in as a user with Group1 privileges or higher.
Step 2	**cc**	Change to the AXSM card.
Step 3	Add a channelized path: **upln** **cnfpath** **uppath** Related commands: **dsppath** **dsppaths**	*This step is for AXSM-XG cards only.* Otherwise, skip to Step 4. Add, configure, and bring up a channelized path. Do this step only if you are configuring a virtual trunk on an AXSM-XG card. See the "Channelizing SONET, SDH, and DS3 (T3) Lines into Paths" section on page 2-17.
Step 4	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure ATM ports. This step establishes ATM communications between two ATM devices. Specify **NNI** for interswitch trunks and **VNNI** for virtual trunks. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 5	**cnfpart** Related commands: **dspparts** **dsppart**	Add and configure a PNNI partition for the trunk. This step reserves trunk resources for the PNNI controller. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 6	**cc**	Change to the PXM card.
Step 7	**dnpnport** <*portid*>	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.

	Command	Comments
Step 8	**cnfpnportsig** **uppnport** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Configure the signaling protocol used on the trunk by setting the **-nniver** option to **pnni10**. See the "Selecting the Port Signaling Protocol" section on page 3-44.
Step 9	**cc**	Change back to the AXSM card.
Step 10	**upilmi** **cnfilmi** Related commands: **dspports** **dspilmis**	Configure and start ILMI on the trunk. ILMI is required on the BXM end of the trunk, so it must be enabled on the AXSM side too. See the "Configuring ILMI on a Port" section on page 3-47.
Step 11	**cc**	Change to the PXM card.
Step 12	**dsppnni-link** **dsppnni-neighbor**	When both ends of the link are configured, verify the PNNI communications between the two ends. In the **dsppnni-link** report, there should be an entry for the port for which you are verifying communications. The reported Hello state should be twoWayInside and the Remote node ID should display the remote node ATM address after the second colon. See the "Verifying PNNI Trunk Communication" section on page 4-52.

AINI Link Configuration Quickstart

The following procedure provides a summary of the tasks required to configure ATM Inter-Network Interface (AINI) links on an AXSM card. This procedure is provided as an overview and as a quick reference for those who have previously configured these types of connections.

Note AINI is a protocol designed to replace the function of IISP. Unless you are configuring a link with another switch that does not support AINI, you should configure an AINI link instead of an IISP link. IISP links provide fewer capabilities than AINI links. For example, IISP links cannot support UNIV4.0 connections.

	Command	Comments
Step 1	username <password>	Start a configuration session. To perform all of the steps in this quickstart procedure, you must log in as a user with Group1 privileges or higher.
Step 2	**cc**	Change to the AXSM card.

	Command	Comments
Step 3	Add a channelized path: **upln** **cnfpath** **uppath** Related commands: **dsppath** **dsppaths**	*This step is for for AXSM-XG cards only.* Otherwise, skip to Step 4. Add, configure, and bring up a channelized path. Do this step only if you are configuring a virtual trunk on an AXSM-XG card. See the "Channelizing SONET, SDH, and DS3 (T3) Lines into Paths" section on page 2-17.
Step 4	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure ATM ports. This step establishes ATM communications between two ATM devices. Specify **NNI** for interswitch trunks. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 5	**cnfpart** Related commands: **dspparts** **dsppart**	Assign trunk resources to the PNNI controller. This step can assign all the trunk bandwidth to a single controller, or it can assign portions of the trunk bandwidth to each controller. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 6	**cc**	Change to the PXM card.
Step 7	**dnpnport** <*portid*>	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.

	Command	Comments
Step 8	**cnfpnportsig** **uppnport** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Configure the signaling protocol used at each end of the AINI link by setting the **-nniver** option to **aini**. See the "Selecting the Port Signaling Protocol" section on page 3-44.
Step 9	**addaddr**	Add destination addresses to each end of the trunk. See the "Defining Destination Addresses for Static Links" section on page 3-60.
Step 10	**addaddr**	Add static addresses to destination ports. This step is required when addresses are not dynamically assigned to the CPE at the destination ports. See the "Assigning Static ATM Addresses to Destination Ports" section on page 3-46.

IISP Link Configuration Quickstart

The following procedure summarizes the tasks required to configure Interim Inter-switch Protocol (IISP) links on AXSM cards. This procedure is provided as an overview and as a quick reference for those who have previously configured these types of connections.

Note AINI is a protocoldesigned to replace the function of IISP. Unless you are configuring a link with another switch that does not support AINI, you should configure an AINI link instead of an IISP link. IISP links provide fewer capabilities than AINI links. For example, IISP links cannot support UNI 4.0 connections.

	Command	Comments
Step 1	username <password>	Start a configuration session. To perform all of the steps in this quickstart procedure, you must log in as a user with Group1 privileges or higher.
Step 2	**cc**	Change to the AXSM card.
Step 3	Add a channelized path: **upln** **cnfpath** **uppath** Related commands: **dsppath** **dsppaths**	*This step is for for AXSM-XG cards only.* Otherwise, skip to Step 4. Add, configure, and bring up a channelized path. Do this step only if you are configuring a virtual trunk on an AXSM-XG card. See the "Channelizing SONET, SDH, and DS3 (T3) Lines into Paths" section on page 2-17.

	Command	Comments
Step 4	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure ATM ports. This step establishes ATM communications between two ATM devices. Specify **NNI** for interswitch trunks. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 5	**cnfpart** Related commands: **dspparts** **dsppart**	Assign trunk resources to the PNNI controller. This step can assign all the trunk bandwidth to a single controller, or it can assign portions of the trunk bandwidth to each controller. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 6	**cc**	Change to the PXM card.
Step 7	**dnpnport** <*portid*>	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.
Step 8	**cnfpnportsig** **uppnport** Related commands: **dsppnports** **dsppnport** **dsppnportsig**	Define the signaling protocol used at each end of the IISP link by setting the **-nniver** option to **iisp30** or **iisp31** for IISP trunks. **Note** Only addresses that are entered manually, using **addaddr**, are propagated between the two networks. **Caution** No mechanism exists to prevent routing loops with manually configured static routes. Take care not to duplicate manually entered addresses. See the "Selecting the Port Signaling Protocol" section on page 3-44.

	Command	Comments
Step 9	**cnfenhiisp** - optional	Optionally, you can configure enhanced IISP using the **cnfenhiisp** command on the PXM controller. Refer to the *Cisco MGX 8800/8900 Series Command Reference, Release 5.2* for a description of **cnfenhiisp**. **Note** The **cnfenhiisp** command only works if the link is up and running.
Step 10	**cc**	Change to the AXSM card.
Step 11	**addaddr**	Add destination addresses to each end of the trunk. See the "Defining Destination Addresses for Static Links" section on page 3-60.
Step 12	**addaddr**	Add static addresses to destination ports. This step is required when addresses are not dynamically assigned to the CPE at the destination ports. See the "Assigning Static ATM Addresses to Destination Ports" section on page 3-46.

XLMI Link Configuration Quickstart

An Extended Link Management Interface (XLMI) link joins a PNNI network with an AutoRoute network. After you establish an XLMI link, you can configure connections that link CPE in the PNNI network with CPE in the AutoRoute network. The interconnection of PNNI and AutoRoute networks enables network expansion beyond the limits of AutoRoute. It also facilitates a gradual migration from an all AutoRoute network to an all PNNI network.

Note XLMI links are not supported on MGX 8950 switches or AXSM-E cards.

To establish an XLMI link, you need to perform the following tasks:

1. Configure an AXSM port for the XLMI link.
2. Configure a BXM port for the XLMI link.
3. Create a connection between a destination on the PNNI network and a destination on the AutoRoute network.

The procedure in this section describes how to configure an AXSM port to support an XLMI link, and references the instructions for creating a connection between the PNNI and AutoRoute networks. Before you begin configuration, consider the following guidelines and limitations:

- XLMI cannot be provisioned on a port which already has connections provisioned. To change the port to XLMI, you must first delete all existing connections.
- The control VC for LMI uses VPI = 3 and VCI = 31. These numbers are not allowed on other types of connections.
- Each AXSM or AXSM/B card supports a maximum of 16 links to AutoRoute networks and feeder nodes.
- Each AXSM or AXSM/B port can support one link to an AutoRoute network, so the maximum number of links to AutoRoute networks is equal to the maximum number of physical AXSM ports.
- XLMI links support SPVCs and SPVPs. SVCs and LVCs are not supported.

- XLMI is not supported on virtual trunks.
- The various XLMI timers are not configurable on the AXSM. Timer configuration is done on the Cisco BPX. The values for the LMI timers on AXSM are
  - LMI SPVC Status Enquiry Timer (T393): 10 sec
  - LMI SPVC Update Status Timer (T394): 10 sec
  - LMI Retry Timers (N394 and N395): 5 sec

The following procedure provides a summary of the tasks required to configure XLMI links on Cisco MGX 8850 switches.

	Command	Comments
Step 1	username <password>	Start a configuration session. To perform all of the steps in this quickstart procedure, you must log in as a user with Group1 privileges or higher.
Step 2	**cc**	Change to the AXSM card.
Step 1	**addport** or **addimagrp** **addimalnk** **addimaport** Related commands: **dspports** or **dspimagrp** **dspimagrps** **dspimalnk** **dspimalnks** **dspimaport** **dspimaports**	Add and configure ATM ports. This step establishes ATM communications between two ATM devices. The AXSM cards supports XLMI on UNI or NNI ports. For standard port configuration, see the "Adding ATM Ports" section on page 3-27. To configure ATM communications over an IMA group, see the "Configuring Inverse Multiplexing over ATM" section on page 3-33.
Step 2	**cnfpart** Related commands: **dspparts** **dsppart**	Assign port resources to the PNNI controller. This step can assign all the port bandwidth to a single controller, or it can assign portions of the port bandwidth to each controller. **Note** When you add a port, a partition is automatically added. Use the cnfpart command to change the configuration of a resource partition. See the "Partitioning Port Resources between Controllers" section on page 3-40.
Step 3	**addlmi** Related commands: **dsplmi**	Add LMI to the port. Replace the *type* variable with 2 for XLMI links. (Type 1 selects feeder operation.)
Step 4	**cc**	Change to the PXM card.

	Command	Comments
Step 5	**dnpnport** <*portid*>	Bring down the port so it can be configured. **Note** The port must be down to use **cnfpnportsig**. The port should be down by default. You can use **dsppnport** to see if the port is down. If it is not down, use **dnpnport** to take the port down.
Step 6	**cnfpnportsig** Related commands: **dsppnport** **dsppnports** **dsppnportsig**	Define the signaling protocol used for the portby setting the -nniver option to **enni** for XLMI trunks. See the "Selecting the Port Signaling Protocol" section on page 3-44.
Step 7	**uppnport** Related commands: **dsppnports** **dsppnport**	Bring up the configured port.
Step 8	—	If you are using CWM to manage your networks, the XLMI link should be ready to use. Use CWM to add a connection from a destination in the AutoRoute network to a destination in the PNNI network. Otherwise, skip this step and continue with Step 9.
Step 9	**addcon**	If you are not using CWM to manage your networks, add a connection from the XLMI link endpoint on the AXSM to a destination on the PNNI network. **Note** The PNNI connection you create must use the same VPI and VCI as the connection defined in the AutoRoute network. See the "Configuring SPVCs and SPVPs" section on page 3-54. **Note** Connections added with the CLI (**addcon**) command cannot be managed by CWM. If you are using CWM, create the connection with CWM. Afterwards, you can modify the connection with CWM or the CLI.
Step 10	—	If you are not using CWM to manage your networks, add a connection from the XLMI link endpoint on the BXM to a destination on the AutoRoute network. **Note** The AutoRoute connection you create must use the same VPI and VCI as the connection defined in the PNNI network.

General AXSM Configuration Procedures

This section describes the following general procedures for configuring AXSM card communications:

- Adding ATM Ports
- Configuring Inverse Multiplexing over ATM
- Partitioning Port Resources between Controllers
- Selecting the Port Signaling Protocol
- Assigning Static ATM Addresses to Destination Ports
- Configuring ILMI on a Port
- Configuring AXSM Line Clock Sources
- Configuring PNNI Links
- Configuring SPVCs and SPVPs
- Defining a Feeder Port
- Defining Destination Addresses for Static Links
- Configuring Point-to-Multipoint SPVCs and SPVPs

The procedures in this section use AXSM commands and show the syntax for AXSM commands. See Chapter 5, "AXSM Command Reference," for descriptions of the AXSM commands and parameters.

See the Table 1-3 on page 1-4 for a list of the AXSM model numbers, back cards, and the number of possible connections.

Some of the procedures in this section use PXM commands and PNNI commands. Refer to the *Cisco MGX 8800/8900 Series Command Reference, Release 5.2* for descriptions of the PXM and PNNI commands and parameters.

For more information on port signaling, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

For more information on ATM address planning, refer to the *Cisco PNNI Network Planning Guide for MGX and SES Products*.

Adding ATM Ports

On an AXSM card, a logical port is also called a virtual interface and is represented by the ifNum variable. The AXSM cards can have the following types of interfaces:

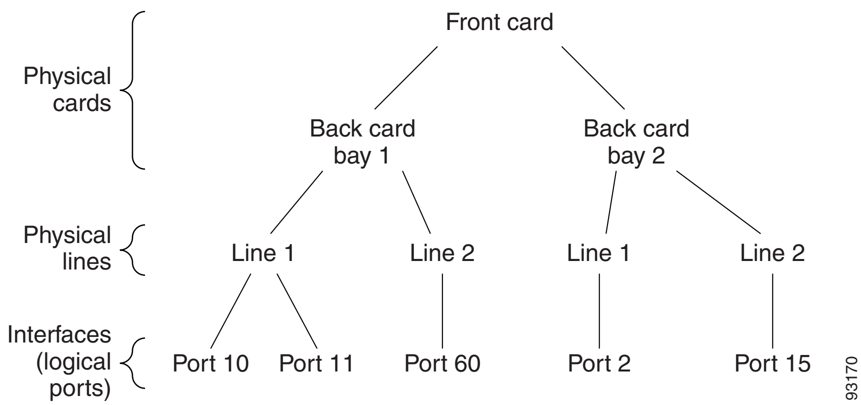
- UNI (User-to-Network Interface) – Used for lines that connect to PBXs, ATM routers, and other ATM devices that connect to the core ATM network through the switch. Only one logical UNI port per line can be configured.
- NNI (Network-to-Network Interface) – Used for trunks that connect to other core ATM network devices, such as another Cisco MGX switch. Only one logical NNI port per line can be configured.
- VNNI (Virtual Network-to-Network Interface) – Supports virtual trunk connections between two ATM end stations. Multiple VNNI ports per line can be configured.
- VUNI (Virtual User-to-Network Interface) – You can configure multiple ports per line.
- EVUNI (Enhanced Virtual User-to-Network Interface) – You can specify a range of VPIs for one interface, and this range of VPIs represents the virtual UNI trunk.

- EVNNI (Enhanced Virtual Network-to-Network Interface) – You can specify a range of VPIs for one interface, and this range of VPIs represents the virtual NNI trunk.

Line ports correspond to line connectors on the switch back cards. Each line can support UNI, NNI, VNNI, VUNI, EVNNI, or EVUNI ports. Bringing up a line establishes minimal connectivity between two nodes. When you add an ATM port to a line, you enable ATM communications over the line.

These differing types of line ports are explained in more detail in the "Logical Ports" section on page 1-6. Figure 3-3 shows the relationship between cards, bays, lines, and logical interface numbers.

Figure 3-3 Relationship between Cards, Bays, Lines, and Logical Interface Numbers



You must configure one ATM port for each line or trunk to enable ATM communications over that link. You define the port type (UNI, NNI, VNNI, VUNI, EVNNI, or EVUNI) when you add the ATM port to the line or trunk.

Note For information on adding ports on a channelized path on an AXSM-XG, see the "Adding ATM Ports" section on page 3-27.

To add an ATM port to a line, use the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Obtain the line number on which you will add the port, and verify that the line/path and port number that you want to use is not already configured. To display a list of the lines and line numbers, enter the **dsplns** command:

```
M8950_DC.5.AXSM.a > dsplns
```

Tip Remember that you cannot configure a line until you have brought it up as described in the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Step 3 Verify that the line and port number you want to use is not configured. To display a list of the ports configured on the AXSM card, enter the following command:

```
M8950_DC.5.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt        (VNNI, (EVNNI,EVUNI)
                                            used)          VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
   11  1.1    Up    Up    5651320   5651320   5       NNI      0      0      0
```

This command displays all ports on the AXSM card in the ifNum (interface number) column. The interfaces listed include UNI, NNI, VNNI, VUNI, EVNNI, and EVUNI ports, as applicable.

Pay attention to the port numbers already in use. When you add a port, you must specify a port number that is unique on the AXSM card. For example, if port number 2 is assigned to line 2.1 (bay 2, line 1), you cannot use port 2 on any other line on that AXSM card.

Step 4 To add an ATM port to a line, enter the following command:

```
addport <ifNum> <bay.line> <guaranteedRate> <maxrate> <sctID> <ifType> [-vpi <vpi>]
[-minvpi <minvpi>] [-maxvpi <maxvpi>]
```

Table 3-2 lists the parameters for configuring ATM ports.

Table 3-2 addport Command Parameters

Parameters	Description
ifNum	A logical port (interface) number. Only one logical port is allowed if the line operates as a UNI or NNI. For a virtual network to network interface (VNNI or EVNNI), multiple ports can exist on a line. The ranges are: • AXSM: 1–60. • AXSM-E: 1–32. • AXSM-XG: 1–126
path_num (AXSM-XG only)	Identifies the channelized path to which you want to add a port. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.
bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
guaranteedRate	Guaranteed rate on a port in cells per second. For all interface types (UNI, NNI, VNNI, EVNNI, and EVUNI), *guaranteedRate* must be the same as *maxrate*. The total guaranteed rates cannot exceed the highest value in the following ranges: • OC48: 50–5651320 cps • OC12: 50–1412830 cps • OC3: 50–353207 cps • T3: 50–96000 cps for PLCP or 104268 cps for ADM • E3: 50–80000 cps • T1:between 50 and 3622 • E1:between 50 and 4528

Table 3-2 addport Command Parameters (continued)

Parameters	Description
maxRate	Maximum rate on a logical port in cells/second. For all interface types (UNI, NNI, VNNI, EVNNI, and EVUNI), *guaranteedRate* must be the same as *maxrate*. The total maximum rates cannot exceed the highest value in the following ranges: • OC48: 50–5651320 cps • OC12: 50–1412830 cps • OC3: 50–353207 cps • T3: 50–96000 cps for PLCP or 104268 cps for ADM • E3: 50–80000 cps • T1:between 50 and 3622 • E1:between 50 and 4528
sctID	The ID of a service class template (SCT) for the port. The range is 0–255. The SCT file must exist on the PXM45 disk. See **cnfcdsct**. **Note** Currently, the system does not support certain parameters in the service class templates (SCTs). These parameters are (when applicable) PCR, SCR, and ICR. You can specify them through **addcon**, **cnfcon**, or Cisco WAN Manager.
ifType	Specifies the port as one of the following types of interfaces: • 1 = UNI (User-to-Network Interface) • 2 = NNI (Network-to-Network Interface) • 3 = VNNI (Virtual Network-to-Network Interface) • 4 = VUNI (Virtual User-to-Network Interface) • 5 = EVUNI (Enhanced Virtual User-to-Network Interface) • 6 = EVNNI (Enhanced Virtual Network-to-Network Interface) EVNNI and EVUNI allow you to specify a range of VPIs for a single interface, and this range of VPIs represents the virtual NNI or virtual UNI trunk. VNNI and VUNI allow you to specify only one VPI for a single interface, and that VPI represents the virtual NNI or virtual UNI trunk. Multiple VNNIs and EVNNIs can coexist on the same line.
-vpi	Virtual Path Identifier: • UNI, Range 1–4095 • NNI, Range 1–4095 • VNNI, Range: 1–4095 • VUNI, Range: 1–255 • EVUNI, Range: 0–255 • EVNNI, Range: 0–4095

Table 3-2 addport Command Parameters (continued)

Parameters	Description
-minvpi	The minimum VPI: • 0 and 255 for EVUNI • 0 and 4095 for EVNNI
-maxvpi	The maximum VPI: • 0 and 255 for EVUNI • 0 and 4095 for EVNNI

The following example command defines a line port as a UNI T3 line:

```
M8950_DC.5.AXSM.a > addport 1 1.1 96000 96000 1 1
```

The following example command defines a line port as an OC48 NNI trunk:

```
M8950_DC.5.AXSM.a > addport 2 2.1 5651328 5651328 2 2
```

Step 5 To display a list of the ports configured on the AXSM card, enter the following command:

```
M8950_DC.5.AXSM.a > dspports
```

This command displays all configured ports on the AXSM card. Port numbers are listed in the ifNum (interface number) column. To view information on a particular port, note the number of that port.

Step 6 To display the port configuration, enter the following command:

```
dspport <ifNum>
```

Replace *<ifNum>* with the number assigned to the port during configuration. The following example shows the report for this command.

```
M8950_DC.5.AXSM.a > dspport 11
Interface Number               : 11
  Line Number                    : 1.1
  Admin State                    : Up        Operational State     : Up
  Guaranteed bandwidth(cells/sec): 5651320   Number of partitions  : 2
  Maximum bandwidth(cells/sec)   : 5651320   Number of SPVC        : 0
  ifType                         : NNI       Number of SPVP        : 0
  VPI number (VNNI, VUNI)        : 0         Number of SVC         : 2
  MIN VPI (EVNNI, EVUNI)         : 0         MAX VPI (EVNNI, EVUNI): 0
  SCT Id                         : 5
  F4 to F5 Conversion            : Disabled
```

Step 7 To configure a resource partition, enter the **cnfpart** command as shown in the following example:

```
M8950_DC.5.AXSM.a > cnfpart -if <if> -id <partionID> -emin <egrMinBw> -emax <egrMaxBw>
-imin <ingMinBw> -imax <ingMaxBw> -vpmin <minVpi> -vpmax <maxVpi> -vcmin <minVci>
-vcmax <maxVci> -mincon <min connections> -maxcon <max connections>
```

Table 3-3 lists the parameters for configuring resource partitions.

Table 3-3 cnfpart Command Parameters

Parameter	Description
-if	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-id	The partition ID number. The ranges are as follows: • AXSM: 1–5 • AXSM-E: 1–20 • AXSM-XG: 1–20
-emin	Specifies the guaranteed percentage of egress bandwidth. Each unit of *egrMinBw* is 0.00001 of the total bandwidth on the port. (An *egrMinBw* of 1000000 = 100%.) This approach provides a high level of granularity.
-emax	Specifies the maximum percentage of the bandwidth. Each unit of *egrMaxBw* is 0.00001 of the total bandwidth available to the port. (An *egrMaxBw* of 1000000 = 100%.) The resulting bandwidth must be at least 50 cps.
-imin	Specifies the guaranteed percentage of the ingress bandwidth. Each unit of *ingMinBw* is 0.00001 of the total bandwidth available to the port. For example, an *ingMinBw* of 1000000 = 100%.
-imax	Specifies the maximum percentage of the ingress bandwidth. Each increment of *ingMaxBw* is 0.00001 of the total bandwidth on the port. For example, an *ingMaxBw* of 1000000 = 100%. Note that the maximum ingress bandwidth must be at least 50 cps.
-vpmin	Specifies the minimum VPI. For NNI, the range is 0–4095. For UNI, the range is 0–255. **Note** On a virtual trunk, the *min_vpi* and *max_vpi* must be the same.
-vpmax	Specifies the maximum VPI in the range 0–4095 for an NNI. For a UNI, the range is 0–255. The *maxvpi* cannot be less than the *minvpi.* **Note** On a virtual trunk, the *min_vpi* and *max_vpi* must be the same.
-vcmin	Minimum VCI range: 0–2000 (OC-48 only) or 1–65535
-vcmax	Maximum VCI: range: 0–2000 (OC-48 only) or 1–65535
-mincon	Specifies the guaranteed number of connections. The range is between 0 and the maximum number of connections in the port group. See **dspcd** for information about port groups. **Note** On UNI ports, 1% of the <*minConns*> value is reserved for signaling.
-maxcon	Specifies the maximum number of connections. The range is between 10 and the maximum number of connections in the port group. See **dspcd** port group information. *maxConns* cannot be less than *minConns*.

Step 8 To display a list showing the resource partition you created, enter the **dspparts** command:

```
M8950_DC.5.AXSM.a > dspparts
if  part Ctlr egr     egr     ingr    ingr    min max   min   max  min   max
Num ID   ID   GuarBw  MaxBw   GuarBw  MaxBw   vpi vpi   vci   vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
----------------------------------------------------------------------------
11   1    2  500000  500000  500000  500000   11 4095    35 65535    100   4000
11   2    5  500000  500000  500000  500000    0   10    32 65535   1000   4000
```

Step 9 To display the configuration of a specific resource partition, enter the **dsppart** <*ifNum*> <*partId*> command. Replace <*ifNum*> with the number of interface (or port) whose resource partition you want to display, and replace <*partId*> with the partition ID number. (See Table 3-3 for a description of the <*ifNum*> and <*partId*> parameters.)

```
dsppart <ifNum> <partId>
```

The following example shows the report provided by the **dsppart** command.

```
M8950_DC.5.AXSM.a > dsppart 11 2
  Interface Number               : 11
  Partition Id                   : 2        Number of SPVC: 0
  Controller Id                  : 5        Number of SPVP: 0
  egr Guaranteed bw(.0001percent): 500000   Number of SVC : 0
  egr Maximum bw(.0001percent)   : 500000
  ing Guaranteed bw(.0001percent): 500000
  ing Maximum bw(.0001percent)   : 500000
  min vpi                        : 0
  max vpi                        : 10
  min vci                        : 32
  max vci                        : 65535
  guaranteed connections         : 1000
  maximum connections            : 4000
```

Tip To change the port configuration, enter the **cnfport** command, or enter the **delport** command to delete a port configuration. You can also activate and deactivate ports using the **upport** and **dnport** commands.

Configuring Inverse Multiplexing over ATM

Inverse Multiplexing over ATM (IMA) is a protocol that runs on the AXSM-32-T1E1-E. IMA allows you to combine multiple T1 or E1 interfaces into a single, high-speed IMA interface. These combinations of multiple links are called IMA groups. IMA groups are comprised of IMA links.

The AXSM-32-T1E1-E supports a maximum of 32 IMA groups; 16 groups in the top bay and 16 groups in the bottom bay. All the IMA links in an IMA group must be in the same bay.

IMA is also supported on the following Cisco MGX cards:

- PXM1E-16-T1E1 (supports a maximum of 16 IMA groups in the bottom bay only)
- AUSM-8-T1/B (supports a maximum of 8 IMA groups)
- AUSM-8-E1/B (supports a maximum of 8 IMA groups)

SCTs number 54 and 55 provide support for IMA groups. However they only support IMA groups with up to 4 lines. You must create your own SCTs for IMA groups with more than 4 lines.

The Cisco MGX 8850 (PXM45) and Cisco MGX 8950 support IMA Versions 1.0 and 1.1.

Note For information on PXM1E IMA, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Note For information on AUSM IMA, refer to the *Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*.

Configuring IMA is a 3-step process, which is described in the following sections:

1. Creating an IMA Group
2. Adding an IMA Link to an IMA Group
3. Adding an IMA Port to an IMA Group

Note Both ends of an IMA connection must support IMA, and the IMA configuration must match on both ends.

Creating an IMA Group

To create an IMA group and add it to an ATM port, use the following procedure:

Step 1 Establish a configuration session with the active AXSM-32-T1E1-E.

Step 2 Enter the **dsplns** command to display all configured lines on the current card.

Note If a line you want to add to the IMA group is up, enter the dnln <x.line> command bring that line down. A line must be down before you add it to an IMA group.

Step 3 Enter the **addimagrp** command to create a new IMA group:

addimagrp <*group*> <*version*> <*minLinks*> <*txImaId*> <*txFrameLen*> <*txclkMode*> <*diffDelayMax*>

Table 3-4 describes the parameters for the **addimagrp** command.

Table 3-4 addimagrp Command Parameters

Parameter	Description
group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.3
version	IMA version. Enter **1** to specify IMA version 1.0, or enter **2** to specify IMA version 1.1
minLinks	Minimum number of links required for group operation. For example, if you create an IMA group of 4 links and specify a minimum number of 3 links, then three of the four specified links must be operational before the IMA group can be used. The range for this value is from 1 to 16.
txImaId	Transmit IMA Id. Enter a number in the range from 0 through 255

Table 3-4 addimagrp Command Parameters (continued)

Parameter	Description
txFrameLen	Transmit Frame Length. Enter **32**, **64**, **128**, or **256** for IMA 1.1, or enter **128** for IMA 1.0
txclkMode	Transmit Clock Mode. Enter **1** to specify CTC. **Note** Option **2**, ITC is not supported in Release 5.1 of the Cisco MGX 8850 (PXM1E) and Cisco MGX 8830 switches.
diffDelayMax	Maximum Differential Delay; • Enter a umber between 1 and 275 msec for T1 • Enter a number between 1 and 220 msec for E1

In the following example, the user creates group 1 running IMA version 1.0. The minimum number of links required for this group to operate is 3. The transmit IMA ID for IMA group 1 is 255, the transmit frame length is 128, the transmit clock mode is CTC, and the maximum differential delay is 100.

```
M8850_LA.12.AXSME.a > addimagrp 1 1 3 255 128 1 100
```

Step 4 To configure additional IMA group parameters, enter the cnfimagrp command as follows:

cnfimagrp <**-grp** *group*> [**-ver** <*version*>] [**-txm** <*minLinks*>] [**-txid** <*txImaId*>] [**-txfl** <*txFrameLen*>] [**-dd** <*diffDelayMax*>] [**-uptim** <*groupUpTime*>] [**-dntim** <*groupDownTime*>] [**-vfb** <*verFallback*>] [**-mode** <*autoRestart*>] **-rxid** <*rxImaIdExpected*>]

Table 3-5 describes the parameters for the **cnfimagrp** command.

Table 3-5 cnfimagrp Command Parameters

Parameter	Description
group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16
version	The protocol version of the IMA group. • 1 = IMA version 1.0 • 2 = IMA version 1.1
minLinks	The minimum number of links that will allow the IMA group to be operational (Range: 1–16). The *minLinks* value is configurable ONLY for IMA version 1.1. For IMA version 1.0, the *minLinks* value is always 128.
txImaId	The IMA ID number transmitted in the IMA ID field of the ICP cell (Range: 0–255).
txFrameLen	The length of transmitted IMA frame in megabytes. For IMA version 1.0, the *txImaFrameLength* value is always 128. For version 1.1, the *txImaFrameLength* value can be 32, 64, 128, or 256.
diffDelayMax	The maximum differential delay in milliseconds (Range: 1–279). Defaults: T1 = 275 E1 = 220
groupUpTime	The group up time. Range: 0–400000 milliseconds. Default: 10000.
groupDownTime	The group down time. Range: 0–100000 milliseconds. Default: 2500.

Table 3-5 cnfimagrp Command Parameters (continued)

Parameter	Description
verFallback	Enables/disables version fallback on the IMA group. Enter 1 to enable version fallback on the specified IMA group, or 2 to disable version fallback on the specified IMA group. **Note** You must set version fallback on the card level with the **cnfimaparms** -fallback <*1|2*> command before you set it for each individual IMA group with the **cnfimagrp -vfb** <*1|2*> command.
autoRestart	Enables, disables, or re-uses IMA auto restart functionality for the current group. Enter **1** to disable IMA auto-restart. Enter **2** to relearn IMA auto-restart, or enter **3** to reuse a previous IMA auto-restart.
rxImaIdExpected	Identifies the expected received IMA ID. The IMA Id is a number in the range from -1 through 255.

Step 5 To verify that the IMA group has been created, enter the **dspimagrps** command:

```
M8850_LA.12.AXSME.a > dspimagrps
Ima  Min  Tx   Rx   Tx   Diff                  NE-IMA                FE-IMA  IMA
Grp  Lnks Frm  Frm  Clk  Delay                  State                 State  Ver
          Len  Len  Mode (ms)
--------------------------------------------------------------------------------
   1    3  128  128  CTC  100                 StartUp              StartUp  1.0

M8850_LA.12.AXSME.a >
```

Adding an IMA Link to an IMA Group

After you have established and configured an IMA group, you can begin adding IMA links to the group. Use the following procedure to add an IMA link to an IMA group.

Step 1 Enter the **dspimagrps** command to see the available IMA groups, as shown in the following example:

```
M8850_LA.12.AXSME.a > dspimagrps
Ima  Min  Tx   Rx   Tx   Diff                  NE-IMA                FE-IMA  IMA
Grp  Lnks Frm  Frm  Clk  Delay                  State                 State  Ver
          Len  Len  Mode (ms)
--------------------------------------------------------------------------------
   1    1  128  128  CTC  150                 StartUp              StartUp  1.1
   2    1  128  128  CTC  150                 StartUp              StartUp  1.1
```

Step 2 Enter the **addimalnk** <*link*> <*group*> command to add an IMA link to an IMA group. Replace <*link*> with link number you want to add to the group. Replace <*group*> with the number of the group to which the link will be added.

Note Enter the **dspimagrps** to see all IMA groups on the current card.

Table 3-6 describes the parameters for the **addimalnk** command.

Table 3-6 addimalnk Command Parameters

Parameter	Description
link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.3
group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.2

In the following example, the user adds the link 1.1 to the IMA group 1.1.

```
M8850_LA.12.AXSME.a > addimalnk  1.1 1.1
```

Note Enter the **dsplns** command to obtain the line number.

Step 3 Enter the **cnfimalnk** command as follows to configure the IMA link you just added:

cnfimalnk -**lnk** <*link*> **-uplif** <*lifUpTime*> **-dnlif** <*lifDnTime*> **-uplods** <*lodsUpTime*> **-dnlods** <*lodsDnTime*>

Table 3-7 describes the parameters for the **cnfimalnk** command.

Table 3-7 cnfimalnk Command Parameters

Parameter	Description
link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16
lifUpTime	LIF integration up time. Range: 0–400000 milliseconds. The LIF (Loss of IMA Frame) defect is the occurrence of persistent OIF (Out of IMA Frame) anomalies for at least 2 IMA frames.
lifDnTime	LIF integration down time. Range 0–100000 milliseconds. The LIF (Loss of IMA Frame) defect is the occurrence of persistent OIF (Out of IMA Frame) anomalies for at least 2 IMA frames.
lodsUpTime	LODS integration up time. Range: 0–400000 milliseconds. The LODS (Link Out of Delay Synchronization) is a link event indicating that the link is not synchronized with the other links within the IMA group.
lodsDnTime	LODS integration down time. Range 0–100000 milliseconds. The LODS (Link Out of Delay Synchronization) is a link event indicating that the link is not synchronized with the other links within the IMA group.

In the following example, the user configures link 1.1.3:1.1 so that it has an LIF up time of 25000 milliseconds, an LIF downtime of 1000 milliseconds, an LODS integration up time of 25000 milliseconds, and an LODS integration down time of 1000 milliseconds.

```
M8850_LA.12.AXSME.a > cnfimalnk -lnk 1.1.3:1.1 -uplif 25000 -dnlif 1000 -uplods 25000 
-dnlods 1000
```

Step 4 Enter the **dspimalnk** <*link*> command to verify the configuration of the new IMA link. Replace <*link*> with the number of the link you configured in Step 4.

In the following example, the user displays the IMA link 1.1.3:1.1.

```
M8850_LA.12.AXSME.a > dspimalnk 1.1.3:1.1
  IMA Link Number                  : 1.1.3:1.1
  IMA Link Group Number            : 1
  Link Rel Delay (msecs)           : 0
  Link NE Tx State                 : Unusable-Failed
  Link NE Rx State                 : Not In Grp
  Link FE Tx State                 : Not In Grp
  Link FE Rx State                 : Not In Grp
  Link NE Rx Failure Status        : Link Fail
  Link FE Rx Failure Status        : No Failure
  IMA Link Tx LID                  : 0
  IMA Link Rx LID                  : 255
  Link Rx Test Pattern             : 255
  Link Test Procedure Status       : Disabled
  Link LIF Integ UpTime            : 25000
  Link LIF Integ DownTime          : 1000
  Link LODS Integ UpTime           : 25000
  Link LODS Integ DownTime         : 1000
```

Adding an IMA Port to an IMA Group

After you have configured an IMA group, you need to add a port to an IMA group to make it fully operational. Use the following procedure to add an IMA port to a group.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Get the group number on which you will add the port. To display a list of the IMA group numbers, enter the **dspimagrps** command.

Step 3 Verify that the link and port number you want to use is not configured. To display a list of the ports configured on the AXSM-32-T1E1-E card, enter the **dspports** command, as follows:

```
8850_LA.2.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt        (VNNI, (EVNNI,EVUNI)
                                            used)          VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
    1  2.1    Up  Down    1412830   1412830   5       NNI      0      0      0
    2  2.2    Up  Down    1412830   1412830   5       NNI      0      0      0
    3  1.1    Up    Up    1412830   1412830   5       NNI      0      0      0
```

This command displays all ports on the AXSM-32-T1E1-E card in the ifNum (interface number) column. Pay attention to the port numbers already in use. When you add a port, you must specify a port number that is unique on the AXSM-32-T1E1-E card. For example, if port number 5 is assigned to line 1.1, you cannot use port 5 on any other line on that AXSM-32-T1E1-E card.

Note The Cisco MGX 8850 (PXM45) and Cisco MGX 8950 support one port per line.

Step 4 To add an ATM port to a group, enter the **addimaport** command as follows:

addimaport <*ifNum*> <*group*> <*guaranteedRate*> <*maxRate*> <*sctID*> <*ifType*> [**-vpi** <*vpi*>] [**-minvpi** <*minvpi*>] [**-maxvpi** <*maxvpi*>]

Table 3-8 lists the parameter descriptions for adding IMA ports.

Table 3-8 addimaport Command Parameters

Parameter	Description
ifNum	The logical port number. Range:4–1003
group	The IMA group number (1–42).
guaranteedRate	The guaranteed minimum bandwidth rate in cells per second. Range for T1: between 50 and N * (3622 * (M-1)/M * 2048/2049) Range for E1: between 50 and N * (4528 * (M-1)/M * 2048/2049) N = the number of IMA links in the IMA group M = the IMA group frame length **Note** On the AXSM-32-T1E1-E card, the guaranteed rate and max rate settings must be the same.
maxRate	The maximum bandwidth rate in cells per second. Range for T1: between 50 and N * (3622 * (M-1)/M * 2048/2049) Range for E1: between 50 and N * (4528 * (M-1)/M * 2048/2049) N = the number of IMA links in the IMA group M = the IMA group frame length **Note** On the AXSM-32-T1E1-E card, the guaranteed rate and max rate settings must be the same.
sctID	The ID number of the port SCT file on the PXM disk. Enter a number in the range from 0–255. The default SCT ID is 0. For IMA, use SCT 54 (policing) or SCT 55 (non-policing).
ifType	Specifies the port as one of the following types of interfaces: • 1 = UNI (User-to-Network Interface) • 2 = NNI (Network-to-Network Interface) • 3 = VNNI (Virtual Network-to-Network Interface) • 4 = VUNI (Virtual User-to-Network Interface) • 5 = EVUNI (Enhanced Virtual User-to-Network Interface) • 6 = EVNNI (Enhanced Virtual Network-to-Network Interface) EVNNI and EVUNI allow you to specify a range of VPIs for a single interface, and this range of VPIs represents the virtual NNI or virtual UNI trunk. VNNI and VUNI allow you to specify only one VPI for a single interface, and that VPI represents the virtual NNI or virtual UNI trunk. Multiple VNNIs and EVNNIs can coexist on the same line.

Table 3-8 addimaport Command Parameters (continued)

Parameter	Description
-vpi <vpi>	The Virtual Path Identifier (VPI), which is used in this case to configure the interface as a virtual trunk. The ranges are as follows: • 1–255 VUNI • 1– 4095 VNNI
-minvpi <*minvpi*>	The minimum VPI. The ranges are as follows: • 0–255 EVUNI • 0–4095 for EVNNI
-maxvpi <*maxvpi*>	The maximum VPI. The ranges are as follows: • 0–255 EVUNI • 0–4095 for EVNNI

In the following example, the user adds IMA port 8 to IMA group 1. The port operates as an NNI and uses the default SCT, with a guaranteed minimum and maximum bandwidth rate of 100 cps.

```
M8850_LA.12.AXSME.a > addimaport 8 1 100 100 0 2
```

Step 5 To display a list of all ports configured on the AXSM card, enter the **dspports** command.

Port numbers are listed in the ifNum (interface number) column. To view information on a particular port, note the number of that port.

Partitioning Port Resources between Controllers

After you add a line or trunk port, you need to define how the port resources are used by the PNNI and MPLS controllers. You can assign all resources to one controller, or you can divide the port resources between both controllers. You can assign the following port resources to controllers:

- Range of VPI values
- Range of VCI values
- Guaranteed percent of bandwidth for ingress and egress directions
- Minimum and maximum number of connections

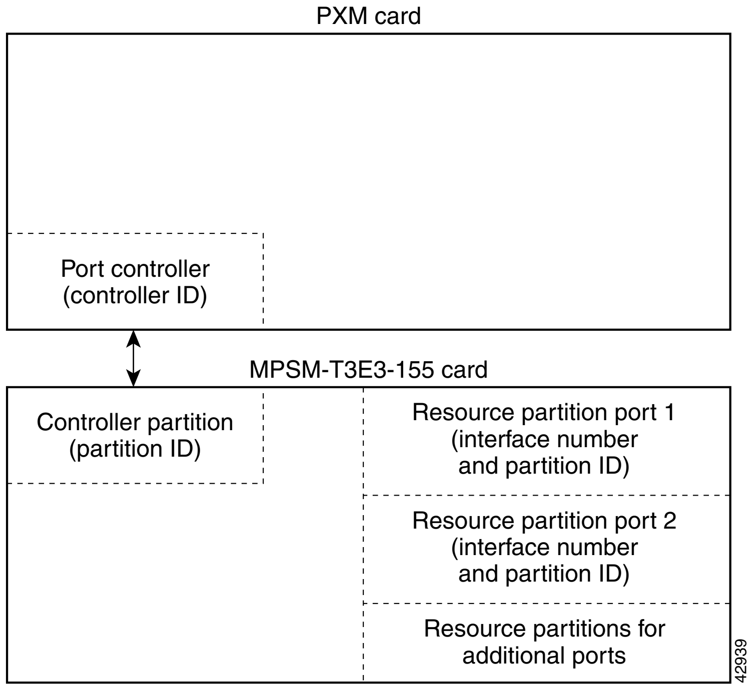
Note Each switch, card, and port supports a maximum number of connections. Use the partition definition to control how available connections are distributed within the switch. Although you can enable the maximum number of connections on all ports, two or three very busy ports could use all available connections and disable communications on all other ports.

The port resources are defined as a group in a controller partition, which is dedicated to a single port controller. You must define one controller partition for each controller type you want to support, and you must configure one resource partition for each port that uses a controller. Figure 3-4 presents a simplified view of the relationship between the port controller, controller partition, and resource partitions. Within the figure, note that the single controller partition connects to the port controller and to the resource partitions.

After you create a port, you must create a resource partition for that port, and select either the MPLS or the PNNI controller. Also, which ATM resources the port will use must be defined.

The controller partition is automatically created when you create the first resource partition. It is important that the same controller partition, and, therefore, the same partition ID, be used for all resource partitions of the same type on the same AXSM card. For example, the controller is identified by the controller ID and the controller partition is identified by the partition ID. The resource partitions are identified by specifying the partition ID in combination with the port ID (interface number).

Figure 3-4 Relationship of Port Controller, Controller Partition, and Resource Partitions



Important VPI/VCI Range Issues

When configuring a partition, be sure to configure the VPI/VCI ranges to meet your actual usage requirements. It is important that you do not configure the entire VPI/VCI range for a single partition. The ability to seamlessly add new partitions in the future depends on configuring only the necessary ranges for each partition.

The Cisco recommended ranges for a single partition are as follows:

- For a VPI on a UNI port where the available range is 0–255, the recommended configured range is 0–140.
- For a VPI on a PNNI port where the range is 0–4096, the recommended configured range is 0–2500 or about 60percent.

Caution When adding or configuring a PNNI partition, do not configure the entire VPI/VCI range for one partition. In the future, if you migrate from a PNNI only service to a PNNI/MPLS service with multiple partitions, you will need the additional VPI/VCI ranges to be able to add a new partition.

If you configure all of the available ranges for the PNNI partition, you will not be able to add a new

MPLS partition without bringing down the port using the **dnport** command to change the PNNI VPI/VCI ranges. Bringing down a port on a live network is usually not an option.

To create a resource partition for a port, use the following procedure.

Note You must add the PNNI controller and add a port before you create a resource partition for a port. For instructions on adding the controller, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*. For instructions on adding ports, see the "Adding ATM Ports" section on page 3-27.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Determine the port number to which you want to assign the resource partition. To display a list of the ports, enter the following command:

```
M8950_DC.5.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt        (VNNI, (EVNNI,EVUNI)
                                            used)          VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
   11  1.1    Up    Up    5651320   5651320   5       NNI      0      0      0
```

This command displays all ports on the AXSM card in the ifNum (interface number) column.

Step 3 To create a resource partition, enter the **addpart** command:

addpart *<ifNum> <partId> <ctrlrId> <egrminbw> <egrmaxbw> <ingminbw> <ingmaxbw> <minVpi> <maxVpi> <minVci> <maxVci> <minConns> <maxConns>*

Table 3-9 lists the parameters for configuring resource partitions.

Table 3-9 addpart Command Parameters

Parameter	Description
if_num	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
part_id	The partition ID number. The ranges are as follows: AXSM: 1–5 AXSM-E: 1–20

Table 3-9 addpart Command Parameters (continued)

Parameter	Description
ctrlr_id	A number that identifies a network controller. The range for *reserved* controller IDs is 1–3 and is the same for all AXSM models. The reserved controller IDs are as follows: 1 = PAR (Portable AutoRoute)—currently not used 2 = PNNI 3 = LSC (Label Switch Controller, also known as MPLS for Multiprotocol Label Switch Controller) The absolute ranges for the AXSM and AXSM-E are as follows: • AXSM: 1–60 • AXSM-E: 1–32
egrminbw	A guaranteed percentage of egress bandwidth. Each unit of *egrminbw* is 0.000001 of the total bandwidth on the port. (An *egrMinBw* of 1000000 = 100%.) This approach provides a high level of granularity.
egrmaxbw	A maximum percentage of the bandwidth. Each unit of *egrmaxbw* is 0.000001 of the total bandwidth available to the port. (An *egrMaxBw* of 1000000 = 100%.) The resulting bandwidth must be at least 50 cps.
ingminbw	A guaranteed percentage of the ingress bandwidth. Each unit of *ingminbw* is 0.000001 of the total bandwidth available to a port. For example, an *ingMinBw* of 1000000 = 100%.
ingmaxbw	A maximum percentage of the ingress bandwidth. Each increment of *ingmaxbw* is 0.000001 of the total bandwidth on the port. For example, an *ingMaxBw* of 1000000 = 100%. Note that the maximum ingress bandwidth must be at least 50 cps.
min_vpi	Minimum VPI. For NNI, the range is 0–4095. For UNI, the range is 0–255.
max_vpi	Maximum VPI in the range 0–4095 for an NNI. For a UNI, the range is 0–255. The *maxvpi* cannot be less than the *minvpi.*
min_vci	Minimum VCI: AXSM range: 0–2000 (OC-48 only) or 1–65535
max_vci	Maximum VCI: AXSM range: 0–2000 (OC-48 only) or 32–65535
minConns	Guaranteed number of connections. The range is between 0 and the maximum number of connections in the port group. See **dspcd** for information about port groups. **Note** On UNI ports, 1% of the <*minConns*> value is reserved for signaling.
maxConns	A maximum number of connections. The range is between 10 and the maximum number of connections in the port group. See **dspcd** port group information. The value of *maxConns* cannot be less than the value of *minConns*.

Step 4 To display a list showing the resource partition you created, enter the following command:

```
M8950_DC.5.AXSM.a > dspparts
if  part Ctlr egr     egr     ingr    ingr    min max   min   max  min   max
Num ID   ID   GuarBw  MaxBw   GuarBw  MaxBw   vpi vpi   vci   vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
----------------------------------------------------------------------------
11   1    2  500000  500000  500000  500000   11 4095    35 65535    100   4000
11   2    5  500000  500000  500000  500000    0   10    32 65535   1000   4000
```

Step 5 To display the configuration of a specific resource partition, note the interface and partition numbers, and enter the following command:

dsppart <*ifNum*> <*partId*>

The following example shows the report provided by the **dsppart** command.

```
M8950_DC.5.AXSM.a > dsppart 11 2
  Interface Number              : 11
  Partition Id                  : 2        Number of SPVC: 0
  Controller Id                 : 5        Number of SPVP: 0
  egr Guaranteed bw(.0001percent): 500000   Number of SVC : 0
  egr Maximum bw(.0001percent)   : 500000
  ing Guaranteed bw(.0001percent): 500000
  ing Maximum bw(.0001percent)   : 500000
  min vpi                       : 0
  max vpi                       : 10
  min vci                       : 32
  max vci                       : 65535
  guaranteed connections        : 1000
  maximum connections           : 4000
```

Selecting the Port Signaling Protocol

The default signaling protocol for all new ports is “UNI none”. If you plan to use this protocol on a line, you can accept this default and skip this section. However, if you plan to use a different protocol on the line, such as NNI or PNNI, you must select the correct protocol using the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the following command to display a list of the ports you can configure:

```
M8950_DC.7.PXM.a > dsppnports
```

The port number appears under the “Ppid” column.

Step 3 Enter the following command to bring down the port you want to configure:

```
MGX8850.7.PXM.a > dnpnport <portid>
```

A port is automatically brought up when you add it. You must bring down the port before you can change the port signaling protocol. Replace <*portid*> with the number that identifies the port you want to bring down.

Enter the **dsppnports** command to see a list of all port numbers you can configure.

Step 4 To confirm the port is down, enter the **dsppnports** command. The following example shows the report that appears.

```
MGX8850.7.PXM.a > dsppnports
Summary of total connections
(p2p=point to point,p2mp=point to multipoint,SpvcD=DAX spvc,SpvcR=Routed spvc)
```

```
Type   #Svcc:   #Svpc:   #SpvcD:  #SpvpD:  #SpvcR:  #SpvpR:  #Total:
p2p:   0        0        0        0        0        0        0
p2mp:  0        0        0        0        0        0        0
                                                          Total=0
Summary of total configured SPVC endpoints
Type   #SpvcCfg: #SpvpCfg:
p2p:   1         0
p2mp:  0         0

Per-port status summary

PortId         IF status         Admin status       ILMI state       #Conns

7.35           up                up                 Undefined        0

7.36           up                up                 Undefined        0

7.37           up                up                 Undefined        0

7.38           up                up                 Undefined        0

Type <CR> to continue, Q<CR> to stop:

1:1.1:1        down              down               Disable          0

2:2.2:1        up                up                 Disable          0
```

Step 5 To select the port signaling protocol, enter the following command:

```
cnfpnportsig <portid> < [-univer {uni30|uni31|uni40|q2931|none|self}]
[-nniver {iisp30|iisp31|pnni10|enni|aini}] [-unitype {public|private}]
[-addrplan {both|aesa|e164}] [-side {user|network}] [-vpi <vpi>]
[-sigvci <signalling-vci>] [-rccvci <routing-vci>] [-cntlvc {ip}]
[-passalongcap {enable|disable}] [-hopcntgen {enable|disable}]
[-vpivcialloc {enable|disable}] [-svcroutingpri <svcroutingPriority>] >
```

The only required parameter for this command is the <*portid*> parameter, but the command serves no purpose if you do not enter at least one option with it. If you include some options with the command and omit others, the omitted option remains set to the last configured value.

Tip With some commands, you can refer to a port using only the interface number, while other commands require you to enter a complete port identification number, which includes the slot, bay, line, and interface numbers. For example, when entering commands at the PXM switch prompt, you always need to specify the complete port identification number. When entering commands at the AXSM card prompt, you can enter only the interface number, because the interface number is unique on the card and identifies the slot, bay, and line for the port.

Note The selection of UNI or NNI is made when the port is added with the **addport** command. You cannot use the **-univer** and **-nniver** options to change the port type.

The following example illustrates how to configure an NNI port to use PNNI Version 1.0 signaling.

```
MGX8850.7.PXM.a > cnfpnportsig 1:1.1:1 -nniver pnni10
```

Step 6 Enter the **cnfoamsegep** command to define the local routing switch feeder port as a non-OAM segment endpoint:

```
MGX8850.7.PXM.a > cnfoamsegep <portid>
```

Replace <*portid*> using the format *slot*:*bay.line*:*ifNum*.

Note This step is required to enable testing with the **tstdelay** command.

Step 7 Enter the **uppnport** command to bring up the port you just configured:

```
MGX8850.7.PXM.a > uppnport <portid>
```

Replace <*portid*> using the format *slot*:*bay.line*:*ifNum*.

Step 8 To verify the status of the port, enter the **dsppnports** command.

Step 9 To display the configuration of the PNNI port, enter the **dsppnport** command:

```
MGX8850.7.PXM.a > dsppnport <portid>
```

Replace <*portid*> using the format *slot*:*bay.line*:*ifNum*. The following example shows the report for this command.

```
M8850.7.PXM.a >   dsppnport 5:1.1:11

Port:               5:1.1:11           Logical ID:       17111051
IF status:          up                 Admin Status:     up
UCSM:               enable             SVC Routing Pri:  8
Auto-config:        enable             Addrs-reg:        enable
IF-side:            network            IF-type:          nni
UniType:            private            Version:          pnni10
PassAlongCapab:     n/a
Input filter:       0                  Output filter:    0
minSvccVpi:         11                 maxSvccVpi:       4095
minSvccVci:         35                 maxSvccVci:       65535
minSvpcVpi:         11                 maxSvpcVpi:       4095

P2P Details:
       (P=Configured Persistent Pep, NP=Non-Persistent Pep, Act=Active)
       #Spvc-P:  #Spvc-NP:  #SpvcAct:  #Spvp-P:  #Spvp-NP:  #SpvpAct:
       0         0          0          0         0          0
       #Svcc:     #Svpc:        #Ctrl:     Total:
       0          0             0             0
P2MP Details:
       (P=Persistent, NP=Non-Persistent, Pa = Party, Act=Active)
Type   #Root:    #Leaf:     #Party:
svcc:  0         0          0
svpc:  0         0          0
       #Spvc-P:  #Spvc-NP:  #SpvcAct:  #Spvp-P:  #Spvp-NP:  #SpvpAct:
       0         0          0          0         0          0
       #SpvcPa-P:#SpvcPaAct:#SpvpPa-P: #SpvpPaAct:
       0         0          0          0
```

Assigning Static ATM Addresses to Destination Ports

When a CPE does not support ILMI, the switch cannot automatically determine the CPE address. To enable communications with the CPE, you must assign a static ATM address to the port leading to the CPE. The static address must match the address used by the CPE.

When assigning the static address, you can use command options to define how widely the static address is advertised within the switch network. Use the following procedure to define a static address for a UNI port.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 To locate the port to which you want to add an address, enter the **dsppnports** command.

Step 3 Enter the **cnfaddrreg** command to turn off automatic address registration (it is enabled by default) on the port that will use the static address:

```
MGX8850.7.PXM.a > cnfaddrreg <portid> no
```

Replace *portid* using the format *slot*:*bay.line*:*ifNum*.

Step 4 Specify an ATM address for the port using the **addaddr** command:

```
addaddr [shelf.]slot[:subslot].port[:subport] atm-address length [-type {int|ext}]
[-proto {local | static}] [-plan {e164|nsap}] [-scope value] [-redst {yes|no}]
[-tnid tnid]
```

Note The **addaddr** command is used to specify static addresses for UNI links to CPE and to define destination addresses for AINI and IISP static links. The command format above shows the options that apply when defining static addresses for CPE.

Replace <*portid*> with the ID you used with the **cnfaddreg** command described earlier.

The following example assigns an ATM address to port 9:1.2:2:

```
MGX8850.7.PXM.a > addaddr 1:2.1:3 47.1111.1111.1111.1111.1111.1111.1111.1111.1111.11 160
```

Step 5 To verify that the new address has been assigned, enter the **dspatmaddr** command as shown in the following example:

```
MGX8850.7.PXM.a > dspatmaddr 2:2.2:1

Port Id: 2:2.2:1
Configured Port Address(es) :
 47.1111.1111.1111.1111.1111.1111.1111.1111.1111.11
length: 160    type: internal      proto: local
scope: 0       plan: nsap_icd      redistribute: false
```

Configuring ILMI on a Port

Interim Local Management Interface (ILMI) is a feature you can activate on any ATM port. Activate ILMI on a port to perform any of the following tasks:

- Use ILMI automatic configuration, which negotiates ATM communication parameters
- Use ILMI address registration, which negotiates an ATM address for an attached CPE using an ILMI prefix assigned to a port
- Enable CWM auto-discovery on a link, which allows CWM to search for and discover Cisco switches that it can manage
- Create a PNNI link to a BXM card on a Cisco BPX

ILMI is enabled by default on all ports, but remains in a down state until ILMI is started. To start ILMI on a port, you can *either*:

- Configure and start ILMI using one command. Enter the **cnfilmi** command.
- Start ILMI using the default values. Use the **upilmi** command.

The sections that follow describe how to perform the following ILMI tasks:

- Configuring ILMI Traps and Signaling
- Configuring ILMI Automatic Configuration
- Configuring ILMI Dynamic Addressing
- Starting ILMI with the Default or Existing Values

Note ILMI can be administratively enabled on signaling ports only.

Configuring ILMI Traps and Signaling

The default ILMI configuration uses standard ILMI signaling VPI and VCI, sets three ILMI signaling timers, and enables the distribution of ILMI management messages (traps) to SNMP managers such as CWM. If the defaults are acceptable, you can start ILMI on the port using the **upilmi** command. To change the defaults and start ILMI, use the following procedure.

Note When ILMI is configured and started at one end of a link, it must be configured and started at the other end of the link before the link will operate properly.

Step 1 Establish a configuration session using a username with Group1 privileges or higher.

Step 2 Prior to configuring ILMI on a port, you need to configure PNNI signaling as described in the "Selecting the Port Signaling Protocol" section on page 3-44.

Step 3 Enter the **cc** command to select the AXSM card on which you want to configure ILMI.

Step 4 To preview the current ILMI configuration for a port, enter the **dspilmis** command. The following example shows the **dspilmis** command report.

```
M8950_DC.5.AXSM.a > dspilmis

    Sig. rsrc  Ilmi  Sig  Sig Ilmi  S:Keepalive T:conPoll K:conPoll
    Port Part State  Vpi  Vci Trap  Interval    Interval  InactiveFactor
    ---- ----  ---- ---- ---- --- ------------  ---------- ----------
   11    1    On    11    16    On          1          5          4
   11    2   Off     0    16    On          1          5          4
```

This example shows that ILMI is enabled on port 11 (ILMI State = On) and is disabled on ports 2 and 13 (ILMI State = Off). All other ILMI parameters are set to the default values.

Note The ILMI state displayed by the **dspilmis** command is the configuration state, not the operational state. To view the operational state, enter the **dsppnports** or **dsppnilmi** commands.

Step 5 Enter the **cnfilmi** command as follows to configure ILMI on a specific port:

cnfilmi **-if** <*ifNum*> **-id** <*partitionID*> **-ilmi** <*ilmiEnable*> **-vpi** <*vpi*> **-vci** <*vci*> **-trap** <*ilmiTrapEnable*> **-s** <*keepAliveInt*> **-t** <*pollingIntervalT491*> **-k** <*pollInctFact*>

Table 3-10 lists the parameters for configuring resource partitions.

Table 3-10 cnfilmi Command Parameters

Parameter	Description
-if	Logical interface number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-**id**	Partition ID in the range 1–20. (See description of **addpart** or **addrscprtn** for information regarding resource partition ID.)
-ilmi	Enable or disable ILMI. 1 = enable. 2 = disable.
-**vpi**	VPI for the ILMI signaling connection. The range is 0–255.
-vci	VPI for the ILMI signaling connection. The range is 0–65535.
-trap	Enable or disable ILMI trap. 1 = enable. 2 = disable.
-s	Keep alive interval. The range is 1–16 seconds.
-t	Polling interval for T491 in the range 0–255 seconds.
-k	Polling interval K in the range 0–255 seconds.

In the following example, the user enables ILMI on port 11.

```
M8950_DC.5.AXSM.a > cnfilmi -if 11 -id 1 -ilmi 1
```

Step 6 To confirm your configuration changes, enter the **dspilmis** command.

Configuring ILMI Automatic Configuration

Using the automatic configuration feature of ILMI Version 4.0, two devices that share a link can share their configurations and negotiate a common set of communication parameters. For example, if two network devices share a link and are configured for different maximum VCIs on a partition, the automatic configuration feature can determine and select the highest VCI supported by both nodes. To use ILMI automatic configuration, the devices at each end of the link must support this ILMI 4.0 feature.

Note If the ILMI automatic configuration feature is enabled at one end and disabled at the other end, a link between two nodes does not operate correctly.

To enable or disable automatic configuration on a port, use the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 To display the automatic configuration status of a port, enter the **dsppnport** command. For example:

```
M8950_DC.7.PXM.a > dsppnport 5:1.1:11

Port:               5:1.1:11          Logical ID:       17111051
IF status:          up                Admin Status:     up
```

```
UCSM:               enable           SVC Routing Pri:  8
Auto-config:        enable           Addrs-reg:        enable
IF-side:            network          IF-type:          nni
UniType:            private          Version:          pnni10
PassAlongCapab:     n/a
Input filter:       0                Output filter:    0
minSvccVpi:         11               maxSvccVpi:       4095
minSvccVci:         35               maxSvccVci:       65535
minSvpcVpi:         11               maxSvpcVpi:       4095

P2P Details:
       (P=Configured Persistent Pep, NP=Non-Persistent Pep, Act=Active)
       #Spvc-P:  #Spvc-NP:  #SpvcAct:  #Spvp-P:  #Spvp-NP:  #SpvpAct:
       0         0          0          0         0          0
       #Svcc:     #Svpc:        #Ctrl:     Total:
       0          0             0             0
P2MP Details:
       (P=Persistent, NP=Non-Persistent, Pa = Party, Act=Active)
Type   #Root:    #Leaf:     #Party:
svcc:  0         0          0
svpc:  0         0          0
       #Spvc-P:  #Spvc-NP:  #SpvcAct:  #Spvp-P:  #Spvp-NP:  #SpvpAct:
       0         0          0          0         0          0
       #SpvcPa-P:#SpvcPaAct:#SpvpPa-P: #SpvpPaAct:
       0         0          0          0
```

The Auto-config field shows whether the automatic configuration feature is enabled or disabled.

Step 3 To enable or disable automatic configuration, bring down the port to be configured with the **dnpnport** command. For example:

```
MGX8850.7.PXM.a > dnpnport 5:1.1:11
```

Step 4 Enter the **cnfautocnf** command to enable or disable the automatic configuration feature on a port, as follows:

```
MGX8850.7.PXM.a > cnfautocnf <portid> <yes | no>
```

Replace *portid* with the port address using the format *slot*:*bay.line*:*ifnum*.

Enter **yes** to enable automatic configuration or enter **no** to disable automatic configuration. The default is **yes**.

Step 5 Up the port you configured with the **uppnport** command. For example:

```
MGX8850.7.PXM.a > uppnport 5:1.1:11
```

Step 6 To verify the change, re-enter the **dsppnport** command.

Configuring ILMI Dynamic Addressing

Dynamic ATM addressing is enabled by default on all Cisco MGX switch ports. After ILMI is started, ILMI can negotiate ATM addresses for CPE connected to the port. To determine the ATM address for the CPE, the switch uses a 13-byte ILMI prefix that is assigned to the port, a 6-byte end system ID, and a 1-byte selector byte.

The end system ID and selector byte are defined on the end system. Depending on the end system configuration, the end system ID may correspond with the interface MAC address. For dynamic addressing to work, the remote device must support it. ILMI versions 3.x and 4.0 support dynamic address registration.

The default ILMI prefix matches the PNNI node prefix and the SPVC prefix, both of which are described in the *Cisco PNNI Network Planning Guide for MGX and SES Products*. If you change the:

- PNNI node prefix, the SPVC prefix and the ILMI prefix remain unchanged.
- SPVC prefix, the ILMI prefix will change with it, as long as no ILMI prefix is assigned directly to the port.

To eliminate the possibility of having a future SPVC prefix change affect dynamic addressing on a port, assign one or more ILMI prefixes to the port.

The following procedure describes how to enable or disable dynamic addressing and how to assign an ILMI address prefix to a port.

Note The Cisco MGX 8850 (PXM45) and Cisco MGX 8950 support up to 255 ILMI prefixes per AXSM card, and these prefixes can be assigned to one port or distributed among the ports.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 To display the dynamic addressing status of a port, use the **dsppnport** command. For example:

```
M8950_DC.7.PXM.a > dsppnport 5:1.1:11

Port:               5:1.1:11          Logical ID:       17111051
IF status:          up                Admin Status:     up
UCSM:               enable            SVC Routing Pri:  8
Auto-config:        enable            Addrs-reg:        enable
IF-side:            network           IF-type:          nni
UniType:            private           Version:          pnni10
PassAlongCapab:     n/a
Input filter:       0                 Output filter:    0
minSvccVpi:         11                maxSvccVpi:       4095
minSvccVci:         35                maxSvccVci:       65535
minSvpcVpi:         11                maxSvpcVpi:       4095

P2P Details:
       (P=Configured Persistent Pep, NP=Non-Persistent Pep, Act=Active)
       #Spvc-P:  #Spvc-NP:  #SpvcAct:  #Spvp-P:  #Spvp-NP:  #SpvpAct:
       0         0          0          0         0          0
       #Svcc:     #Svpc:        #Ctrl:     Total:
       0          0             0             0
P2MP Details:
       (P=Persistent, NP=Non-Persistent, Pa = Party, Act=Active)
Type   #Root:    #Leaf:     #Party:
svcc:  0         0          0
svpc:  0         0          0
       #Spvc-P:  #Spvc-NP:  #SpvcAct:  #Spvp-P:  #Spvp-NP:  #SpvpAct:
       0         0          0          0         0          0
       #SpvcPa-P:#SpvcPaAct:#SpvpPa-P: #SpvpPaAct:
       0         0          0          0
```

The **Addrs-reg** field shows whether the dynamic addressing feature is enabled or disabled.

Step 3 To view the ILMI prefixes assigned to a port, enter the **dspprfx** command as follows:

```
MGX8850.7.PXM.a > dspprfx <portid>
```

Replace *portid* with the port address using the format *slot*:*bay.line*:*ifnum*. For example:

```
MGX8850.7.PXM.a > dspprfx 5:1.1:11
```

```
INFO:  No Prefix registered
```

In the example above, no ILMI prefixes have been assigned to the port, so the port will use the prefix configured for the SPVC prefix.

Step 4 To change the dynamic addressing configuration, bring down the port to be configured with the **dnpnport** command. For example:

```
MGX8850.7.PXM.a > dnpnport 5:1.1:11
```

Step 5 To enable or disable dynamic address registration, enter the following command:

```
MGX8850.7.PXM.a > cnfaddrreg <portid> <yes | no>
```

Enter **yes** to enable dynamic address configuration or enter **no** to disable it. The default is **yes**.

Step 6 Enter the following command to define an ATM prefix for a port:

```
MGX8850.7.PXM.a > addprfx <portid> <atm-prefix>
```

Replace *portid* using the format *slot*:*bay.line*:*ifNum*.

Replace *atm-prefix* with the 13-byte ATM address prefix that you want the dynamically assigned address to use. Specify the address prefix using 26 hexadecimal digits. The range for each digit is 0 through F (0 through 9, A, B, C, D, E, and F).

Note The address prefix you choose should conform to the address plan for your network. For more information on address planning, refer to the *Cisco PNNI Network Planning Guide for MGX and SES Products*.

Tip Each hexadecimal digit represents 1 nibble (four bits), and each pair of hexadecimal digits represents a byte. There are 13 pairs of hexadecimal digits in the prefix, or 26 total digits.

Step 7 Up the port you configured with the **uppnport** command. For example:

```
MGX8850.7.PXM.a > uppnport 5:1.1:11
```

Step 8 To verify the proper ATM prefix configuration for a port, re-enter the **dspprfx** command.

Step 9 To see a dynamically assigned address that uses the prefix, enter the **dspilmiaddr** <*port*> command.

Starting ILMI with the Default or Existing Values

The **upilmi** command starts ILMI on a port with the existing ILMI configuration, which is the default configuration when ILMI has never been configured on that port. Although ILMI starts automatically when you configure it with the **cnfilmi** command, you might have to bring down ILMI with the **dnilmi** command to make a configuration change such as adding an ILMI prefix.

Note ILMI can be administratively enabled on signaling ports only.

To start or restart ILMI with the **upilmi** command, use the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 If you have not already done so, configure PNNI signaling as described in the "Selecting the Port Signaling Protocol" section on page 3-44.

Step 3 Enter the **cc** command to select the AXSM card on which you want to start ILMI.

Step 4 If you do not know the interface number and partition ID for the port on which you are starting ILMI, enter the **dspparts** command as shown in the following example.

```
M8950_DC.5.AXSM.a > dspparts
if  part Ctlr egr      egr      ingr     ingr     min max   min    max  min   max
Num ID   ID   GuarBw  MaxBw   GuarBw  MaxBw   vpi vpi   vci    vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
-----------------------------------------------------------------------------
11   1    2  500000  500000  500000  500000   11 4095    35 65535    100   4000
11   2    5  500000  500000  500000  500000    0   10    32 65535   1000   4000
```

Tip To see the relationship between interface numbers and lines, enter the **dspports** command.

Step 5 To start ILMI on a port, enter the **upilmi** command as follows:

```
M8950_DC.5.AXSM.a > upilmi <ifNum> <partId>
```

Replace *ifNum* with the interface number for the port, and replace *partId* with the partition number assigned to the port. For example:

```
M8950_DC.5.AXSM.a > upilmi 2 1
```

Step 6 To display the ILMI status of all the ports on an AXSM card, enter the **dspilmis** command. For example:

```
M8950_DC.5.AXSM.a > dspilmis

    Sig. rsrc  Ilmi  Sig  Sig Ilmi  S:Keepalive T:conPoll K:conPoll
    Port Part State  Vpi  Vci Trap  Interval    Interval  InactiveFactor
    ---- ----  ---- ---- ---- --- ------------  ---------- ----------
   11    1    On    11    16    On          1          5          4
   11    2   Off     0    16    On          1          5          4
```

The ILMI State column displays the configured state for ILMI, which is On if ILMI is enabled and Off if ILMI is disabled (use **dsppnports** or **dsppnilmi** to see the operational state).

Configuring AXSM Line Clock Sources

To configure the switch to receive a clock source on an AXSM line, you must do the following tasks:

- Connect a line between the AXSM and the node with the clock source
- Activate the line
- Create a logical port (subport) for the clock signal
- Create a resource partition

Refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2* for information on how to activate a line. See the "Selecting the Port Signaling Protocol" section on page 3-44 and the "Partitioning Port Resources between Controllers" section on page 3-40 for procedures to create ports and resource partitions.

The following procedure describes how to configure an AXSM clock source after the line and port have been configured.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 To set a primary or secondary AXSM clock source, enter the following command:

```
MGX8850.7.PXM.a > cnfclksrc <priority> [shelf.]<slot:bay.line:ifnum>
```

Tip To get the correct *slot*:*bay*.*line*:*ifnum* specification, use the port ID displayed by the **dsppnports** command.

The following command example shows how to configure a secondary clock source for subport (logical port) 10 on line 1 of the AXSM card in the upper bay of slot 3. Note the placement of the periods and colons.

```
MGX8850.7.PXM.a > cnfclksrc secondary 3:1.1:10
```

Step 3 To configure an additional clock source, repeat Step 2 using the correct parameters for the additional source.

Configuring PNNI Links

This section describes AXSM configuration procedures that apply only to PNNI links. The following subsections explain the following tasks:

- Configuring SPVCs and SPVPs
- Defining a Feeder Port

Configuring SPVCs and SPVPs

SPVCs and SPVPs are created between two ATM ports, and each SPVC and SPVP has two endpoints. The master endpoint is responsible for routing and rerouting functions. The slave endpoint is responsible for responding to requests from the master endpoint during connection setup and rerouting. Both endpoints are configured on the switch or switches to which the ATM CPE connects. Such endpoints can be in the same switch or in different switches. One endpoint of an SPVC or SPVP can exist on an MSSBU switch, while the endpoint can exist on different Cisco ATM equipment, or on ATM equipment from another vendor.

The master and slave relationships exist for each SPVC or SPVP, and apply only to the SPVC or SPVP connection. For example, you can have one SPVC with a master on Node A and a slave on Node B, and then create another with the Master on Node B and the slave on Node A. It is good practice to distribute the master side of SPVCs and SPVPs among the network nodes so that route processing is distributed.

Cisco MGX PXM1E-based and PXM45-based switches support two types of SPVCs/SPVPs:

- Single-ended SPVCs
- Double-ended SPVCs

Single-ended SPVCs are defined at the master endpoint and do not require configuration of a slave endpoint. The primary benefit of single-ended SPVCs is that they are easier to configure. After configuration, the master endpoint configures and brings up the slave endpoint. In order for this feature to work correctly, the destination endpoint must support single-ended SPVCs. Single-ended SPVCs are non-persistent. Non-persistent SPVCs will attempt to route on the specified path first. If the configured path is unavailable, the non-persistent SPVC will attempt to route over another available path.

Note The AXSM supports only the origination of single-ended SPVCs. This means that you can configure master endpoints for single-ended SPVCs that terminate on other card types, such as the FRSM12. If both SPVC endpoints must terminate on AXSM cards, you must create a double-ended SPVC.

Double-ended SPVCs and SPVPs require separate configuration of the master and slave endpoints. The slave endpoint must be configured first because this step generates a slave address that must be entered during master endpoint configuration Double-ended SPVCs are persistent, because they will follow only the specified path. If that path is unavailable, the persistent SPVC/SPVP will not route.

The following sections describe how to configure slave and master SPVC and SPVP connections.

Tip The configuration of SPVCs and SPVPs is very similar. The difference is that SPVPs are assigned VCI 0 and do not use nonzero VCI numbers. An SPVC requires a nonzero VCI.

Configuring the Slave Side of SPVCs and SPVPs

To configure the slave side of an SPVC or SPVP, use the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Define the slave side of the SPVC or SPVP by entering the following command:

```
M8950_DC.5.AXSM.a > addcon <ifNum> <vpi> <vci> <serviceType> <mastership>
[-slave atmAddr.vpi.vci] [-lpcr <cellrate>] [-rpcr <cellrate>] [-lscr <cellrate>]
[-rscr <cellrate>] [-lmbs <cells>] [-rmbs <cells>] [-lcdv <time>] [-rcdv <time>]
[-lctd <time>] [-rctd <time>] [-lmcr <cellrate>] [-rmcr <cellrate>] [-cdvt <time>]
[-cc <1|0>] [-stat <1|0>] [-frame <1|0>] [-mc <maxCost>][-lputil <local>]
[-rputil <remote>] [-rtngprio <routingPriority>]
```

Caution After you create an SPVC connection, you cannot change the SPVC prefix until all SPVC connections have been deleted. The procedure for changing the SPVC prefix is described in the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Step 3 Enter the **dspcon** <*portid*> <*vpi*> <*vci*> command to verify that the SPVC or SPVP was associated with the preferred route.

Tip The PCR, MBS, CDVT, CDV, MCR, and CTD configuration options are optional. To override the default values for any option, enter the option with a new value.

Note You can configure additional ABR parameters on the AXSM-E and AXSM-XG cards with the **cnfabr** command. For more information, refer to the *Cisco MGX 8800/8900 Series Command Reference, Release 5.2*. Note that the AXSM/A and AXSM/B cards do not support the **cnfabr** command.

The following command example defines a port as the slave side of an SPVC. Note the slave id shown in the command response.

```
MGX8850.1.AXSM.a > addcon 3 101 101 1 2
slave endpoint added successfully
slave endpoint id : 47009181000000000001A531C2A00000101180300.101.101
```

Step 4 Write down the NSAP address the switch displays when the **addcon** command is complete. You will need this to configure the master side of the SPVC.

Tip When you set up the master side of the connection, you will have to enter the slave ATM address reported by the **addcon** command. If you maintain the current session or use the session Copy command to copy the ATM address now, you can use the session Paste command to complete the **addcon** command on the switch that hosts the master side of the connection.

Step 5 Verify the slave-side SPVC addition by entering the following command:

```
MGX8850.1.AXSM.a > dspcons
```

The switch displays a report similar to the following:

```
MGX8850.1.AXSM.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld     Admn   Alarm
------    ----------   ----   --------   ---    ----     ----   -----
    0  03 0101 00101   VCC        cbr1   S   02022a26     UP     Condn
```

Configuring the Master Side of SPVCs and SPVPs

To configure the master side of an SPVC, use the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Tip During this procedure, you will have to enter the ATM address for the slave end of the connection. If you establish this session from the same workstation you used to create the slave connection, you can use the Copy and Paste commands to avoid data entry errors.

Step 2 Enter the **cc** command to select the AXSM card that hosts the master side of the SPVC:

```
MGX8850.7.PXM.a > cc <slotnumber>
```

Step 3 Define the master side of the SPVC by entering the following command:

```
M8950_DC.5.AXSM.a > addcon <ifNum> <vpi> <vci> <serviceType> <mastership>
[-slave atmAddr.vpi.vci] [-lpcr <cellrate>] [-rpcr <cellrate>] [-lscr <cellrate>]
[-rscr <cellrate>] [-lmbs <cells>] [-rmbs <cells>] [-cdvt <time>]
[-lcdv <time>] [-rcdv <time>] [-lctd <time>] [-rctd <time>]
[-cc <1|0>] [-stat <1|0>] [-frame <1|0>] [-mc <maxCost>] [-lputil <local>]
[-rputil <remote>] [-slavepersflag <slavepers>] [-rtngprio <routingPriority>]
```

If you omit an optional parameter, the SPVC/SPVP uses the default value.

Tip The PCR, MBS, CDVT, CDV, MCR, and CTD configuration options are optional. If you omit one of these options when entering the addcon command, the connection uses the default value. To override the default values for any option, enter the option with a new value.

The following command example defines a port as the master side of an SPVC. Note the master ID shown in the command response.

```
M8950_DC.5.AXSM.a > addcon 3 101 101 1 1 -slave
47009181000000001A531C2A00000101180300.101.101
master endpoint added successfully
master endpoint id : 4700918100000000107B65F33C0000010A180300.101.101
```

Step 4 Verify the master-side SPVC addition by entering the following command:

```
M8950_DC.5.AXSM.a > dspcons
```

The switch displays a report showing all connections. The following example shows a report for a switch with one connection:

```
M8950_DC.5.AXSM.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld     Admn   Alarm
------    ----------   ----   --------   ---    ----     ----   -----
    0  03 0101 00101   VCC         cbr1   M   02022c36     UP      none
```

Step 5 To display the configuration for a single connection, enter the following command:

```
MGX8850.9.AXSM.a > dspcon ifNum vpi vci
```

Replace the *ifNum* parameter with the interface or port number. The following example shows a **dspcon** command report.

```
M8950_DC.5.AXSM.a > dspcon 3 101 101
-------------------------------------------------------------------------
Local   :                NSAP  Address                    vpi       vci
(M)       4700918100000000107B65F33C0000010A180300         101       101
Remote  :                NSAP  Address                    vpi       vci
(S)       47009181000000001A531C2A00000101180300         101       101
-------------------------------------------------------------------------
Conn. Type    :      VCC                          Admn Status  :  ADMN-UP
Service Type  :     cbr1                          Oper Status  :       OK
Controller    :        2                          Record #     :        0
-------------------------------------------------------------------------
Local PCR     :       50                          Remote PCR   :       50
Local SCR     :      N/A                          Remote SCR   :      N/A
Local CDV     :       -1                          Remote CDV   :       -1
Local CTD     :       -1                          Remote CTD   :       -1
Local MBS     :      N/A                          Remote MBS   :      N/A
Max Cost      :       -1                          Frame discard:        N
Local CDVT    :   250000
-------------------------------------------------------------------------
OAM CC Config : DISABLED                          Statistics   : DISABLED
-------------------------------------------------------------------------
Loopback Type : No  Lpbk | Dir: N/A     | Status: No Lpbk | RTD:      0us
-------------------------------------------------------------------------

Type <CR> to continue, Q<CR> to stop:

-------------------------------------------------------------------------
Port side Tx  :  normal                           Swth side Tx :  normal
Port side Rx  :  normal                           Swth side Rx :  normal
```

```
---------------------------------------------------------------------------
I-AIS/RDI   E-AIS/RDI   CONDITIONED   CCFAIL   IfFail   Mismatch  LMI-ABIT
   NO          NO            NO          NO       NO        NO         NO
---------------------------------------------------------------------------
```

The -1 entries in the example above indicate that a value was not specified with the **addcon** command. The N/A entries indicate that a value is not applicable to connections with this service type.

Step 6 To display connections from the PXM card, enter the **cc** command to select the active PXM, then enter the **dspcons** command, as follows:

```
MGX8850.7.PXM.a > dspcons
```

The following example shows the report for the connection shown in the preceding examples.

```
MGX8850.7.PXM.a > dspcons

Local Port         Vpi.Vci   Remote Port        Vpi.Vci    State   Owner
----------------------------+----------------------------+-------+------
1:2.1:3           101 101    Routed            101 101     OK          SLAVE
Local  Addr: 47.00918100000000001a531c2a.000001011803.00
Remote Addr: 47.009181000000000107b65f33c.0000010a1803.00
```

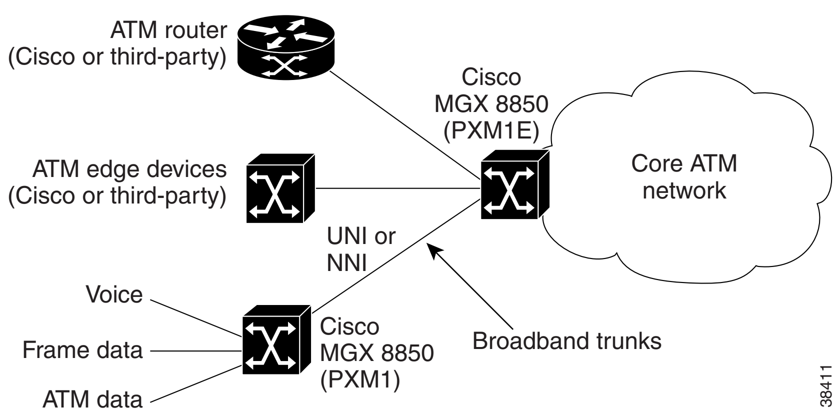
Defining a Feeder Port

An ATM feeder node provides a connection between multiple relatively slow lines (such as T1 lines) and a relatively faster uplink (such as an OC-3 line) to an ATM core network. Feeders such as the Cisco MGX 8850 PXM1-based switch can concatenate traffic from Frame Relay, ATM, circuit emulation, and voice circuits for transmission over the core to other feeders or to Customer Premise Equipment (CPE).

Note Feeder ports are not supported on MGX 8950 switches and AXSM-E cards.

Figure 3-5 shows a topology that includes a Cisco MGX 8850 PXM1-based feeder node.

Figure 3-5 Feeder Node Topology



In the configuration shown in Figure 3-5, the MGX 8850 switch supports up to 16 feeders. When using the Cisco MGX 8850 PXM1-based switch as a feeder, you can route traffic to the core from the following Cisco MGX 8850 PXM1-based service modules:

- AUSM
- CESM
- FRSM
- RPM
- VISM

The lower speed communication lines that connect to the feeder must exit the core network on lines that lead to another feeder or CPE. To enable communications between a feeder and a remote feeder or CPE, you need to configure an SPVC as described in the "Configuring SPVCs and SPVPs" section on page 3-54. Table 3-11 identifies the supported interoperability between Cisco MGX 8850 PXM1-based service modules over these AXSM SPVCs.

Table 3-11 Service Module Compatibility between Feeders

Feeder A Service Module Type	MGX 8850 Service Module Type	Feeder B Service Module Type
FRSM	AXSM	FRSM
FRSM	AXSM/B	AUSM
FRSM	AXSM-E	RPM
AUSM		AUSM
AUSM		CESM
AUSM		VISM
AUSM		RPM
CESM		CESM
VISM		VISM
RPM		RPM

Note To operate properly, the Cisco MGX 8850 PXM1-based feeder must be running compatible software. For information on the compatible feeder software, refer to the *Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.2.00* or the *Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.0.02.*

The MGX 8850 switch uses the LMI Annex G protocol to communicate with the Cisco MGX 8850 PXM1-based feeder node. When you define a feeder port, you instruct the switch to use this protocol to communicate with a feeder. The following procedure describes how to define a feeder port on the MGX 8850 switch.

Step 1 Establish a configuration session using a user name at any user level.

Step 2 To identify a port as a feeder port, enter the **addfdr** command as follows:

```
M8950_DC.5.AXSM.a > addfdr <ifNum>
```

Replace *ifNum* with the interface number for the port. For example:

```
M8950_DC.5.AXSM.a > addfdr 1
```

Tip The interface number is displayed in the **dspports** command report.

Note The **addfdr** command is blocked if other connections have been defined on the interface.

Step 3 To display the feeder ports configured on the AXSM card, enter the **dspfdrs** command.

Step 4 To display information on a specific feeder port, enter the **dspfdr** <*ifnum*> command and replace *ifnum* with the interface number.

Note For more information on managing feeder node connections, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

After you configure a feeder connection, you can enter the **dspcons** command to check for alarms on the feeder line. In the example below, the Abitfail alarm on connections 3 and 4 indicate a communication problem between the routing switch and the feeder node.

```
MGX8850.13.AXSM.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld    Admn   Alarm
------    ----------   ----   --------   ---    ----    ----   -----
    0  01.0001.00032   VCC        ubr1   M   00dfdfe9     UP   multiple
    1  01.0001.00033   VCC        ubr1   M   00de8ad8     UP   multiple
    2  01.0001.00041   VCC        cbr1   S   00dfb0d8     UP   Condn
    3  01.0001.00042   VCC        cbr1   S   00dfe281     UP   Abitfail
    4  01.0001.00043   VCC        cbr1   S   00dfe28a     UP   Abitfail
    5  01.0001.00052   VCC        ubr1   S   00e1244f     UP   multiple
```

Possible causes for the alarms shown above include:

- Disconnected or damaged line
- Feeder port not configured to communicate with routing switch
- Service module failure in feeder

Defining Destination Addresses for Static Links

Typically, an AINI or IISP static link joins two independent networks. AINI or IISP links are used instead of PNNI so that the topologies of the two networks remain unknown to the each other.

When creating a static link, you must identify destination addresses for each side of the link. These addresses identify which ATM nodes are accessible on the other side of the link. After you define these addresses, all requests for these addresses are routed over the static link to the other network.

Note To enable bidirectional call initiation, the appropriate destination address must be configured at each end of the link. For example, if nodes A and B have PNNI connections to a static link, the ATM address for Node B must be added to the Node A side of the static link, and the Node A address must be added to the Node B side of the static link.

Use the following procedure to add destination addresses to a static link.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 To locate the port to which you want to add an address, enter the **dsppnports** command.

Step 3 Specify an ATM address using the following command:

```
addaddr [shelf.]slot[:subslot].port[:subport] atm-address length [-type {int|ext}]
[-proto {local | static}] [-plan {e164|nsap}] [-scope value] [-redst {yes|no}]
[-tnid tnid]
```

Note The **addaddr** command is used to define destination addresses for static links and to specify static addresses for links to CPE. The command format above shows the options as they apply when defining destination addresses for static links.

Step 4 To verify that the new address has been assigned, enter the following command:

```
MGX8850.7.PXM.a > dspatmaddr <portid>
```

Replace <*portid*> with the port address using the format *slot*:*bay.line*:*ifnum*. For example:

```
MGX8850.7.PXM.a > dspaddr 2:1.2:2
47.0091.8100.0000.0003.6b5e.30cd.0003.6b5e.30cd.01
length: 160    type: exterior      proto: static
scope: 0       plan: nsap_icd      redistribute: false
```

Configuring Point-to-Multipoint SPVCs and SPVPs

In point-to-multipoint (P2MP) connections, one master endpoint, or *root,* can be configured to support several slave endpoints, or *parties*.

P2MP SPVCs and SPVPs are created between several ATM CPE. In a P2MP connection, the root is responsible for routing and rerouting, and the parties are responsible for responding to requests from the master during connection setup and rerouting. The root and its parties are configured on the switch to which the ATM CPE connects. These endpoints can be on the same switch or on different switches.

P2MP functionality is necessary for the following applications:

- data and video broadcast
- LAN emulation

The procedures in this section describe how to configure P2MP connections on AXSM/B, AXSM-E, and AXSM-XG cards. For more detailed information on planning and establishing P2MP connections in a PNNI network, refer to the *Cisco PNNI Network Planning Guide for MGX and SES Products.*

Note P2MP is not supported on AXSM/A cards.

Keep the following in mind when configuring P2MP connections on AXSM cards:

- P2MP is supported on switches with PXM45/B and PXM45/C controllers only. PXM45/A switches do not support P2MP.
- AXSM-E cards do not support egress multicasting and, therefore, do not support branching.

- A root can originate on a CBSM, but it cannot terminate on a CBSM. In other words, parties are not supported on the CBSMs. This is because P2MP parties are non-persistent, and CBSMs do not support non-persistent connections.
- ABR P2MP connections are not supported.
- P2MPs support uni-directional traffic.
- Unicast (P2P) traffic has a higher priority than multi-cast (P2MP) traffic. P2MPs have a default routing priority of 8.
- P2MPs do not support CUGs.
- In a P2MP connection, the root can be on any port that supports ingress multicasting. The port that is the root of the connection does not need to support egress multicasting. The port on which the parties are configured must support both egress and ingress multicasting. For example, if you add a party on a port that does not support egress multicasting, the connection will not route.
- All configuration for P2MP connections is done at the root.You can not do any configuration on the remote (slave) end of the connection. Any attempt to specify parameters for the remote end will be blocked.

Table 3-12 summarizes the connection limit on Cisco MGX 8850 (PXM45) and Cisco MGX 8950. The limits are the same for all switches.

Table 3-12 Connection/Party Limits for Cisco MGX 8850 (PXM45) and Cisco MGX 8950

Connection Type	Limits
Total number of connections (P2P and P2MP)	250,000
Total number of P2MP Connections	5000
Number of parties per P2MP connection	1000
Number of branches at originating node	128
Total Number of parties per node	10,000

The establishment of a P2MP connection is a two-step process:

1. Set up the master end point, or *root*, of the connection.
2. Add parties to the root of the connection.

Tip The configuration of SPVCs and SPVPs is very similar. The difference is that SPVPs are assigned VCI 0 and do not use nonzero VCI numbers. An SPVC requires a nonzero VCI.

To configure a P2MP connection, use the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **cc** command to change to the AXSM card that will host the root of the P2MP connection.

Step 3 At the AXSM prompt, enter the **addcon** command to establish the master end-point, or root, of a P2MP connection, as shown in the following example. Be sure to include the -casttype 1 option to ensure that this connection is a P2MP connection.

```
addcon ifNum vpi vci serviceType mastership [-casttype <value>] [-slave <value>]
[-lpcr  <local -> remote PCR>]    [-rpcr  <remote -> local PCR>]
[-lscr  <local -> remote SCR>]    [-rscr  <remote -> local SCR>]
[-lmbs  <local -> remote MBS>]    [-rmbs  <remote -> local MBS>]
[-lcdv  <local -> remote maxCDV>] [-rcdv  <remote -> local maxCDV>]
[-lctd  <local -> remote maxCTD>] [-rctd  <remote -> local maxCTD>]
[-lmcr  <local -> remote MCR>]    [-rmcr  <remote -> local MCR>]
[-cdvt  <local CDVT>] [-cc <OAM CC Cnfg>] [-stat <Stats Cnfg>] [-frame <frame discard>]
[-mc <Max Cost>] [-lputil <local -> remote PUtil>] [-rputil <remote -> local PUtil>]
[-slavepersflag <slavepers>] [-rtngprio <routingPriority>] [-prefrte <preferredRouteId>]
[-intvsvd <internal vsvd config>] [-extvsvd <external vsvd config>]
[-directrte <directRoute>]
```

In the following example, the root or master end of a P2MP connection is set up on interface 3, on VPI 101 and VCI 101.

```
M8950_DC.5.AXSM.a > addcon 3 101 101 1 1 -casttype 1
```

Step 4 Enter the **dspcon** <*portid*> <*vpi*> <*vci*> command to verify that the root or master end was established properly. Replace the *ifNum* parameter with the interface or port number of the connection. Replace <*vpi*> and <*vci*> with the VPI and VCI of the connection.

Step 5 Enter the **cc** command to change to the active PXM45 card.

Step 6 At the active PXM45 prompt, enter the **addparty** command to add a party to the connection you established in Step 3, as shown in the following example.

```
MGX8850.8.PXM.a > addparty <port> <vpi> <vci> <epref> [-party <party_nsap.vpi.vci>
```

The **addparty** command parameters are described in Table 3-13.

Table 3-13 addparty Command Parameters

Parameter	Description
port	Port identifier, in the format [shelf.]slot[:subslot].port[:subport]
vpi	vpi range (UNI: 0..255 | NNI: 0..4095)
vci	vci range 35..65535
epref	endpoint reference range 1..32767
party	PartyNSAP.vpi.vci. To obtain a slave/party’s NSAP, see the “Obtaining the NSAP for a Party” section on page 3-64.

Step 7 To verify that the party was added properly, enter the **dspparty** command as follows:

```
MGX8850.8.PXM.a > dspparty <port> <vpi> <vci> <epref>
```

The **dspparty** command parameters are the same parameters you set with the **addparty** command (Table 3-13). The following example shows the **dspparty** command display:

```
MGX8850.8.PXM.a > dspparty 5.3 100 100 -epref 10
-----------------------------------------------------------------------------
Local  5:-1.3:-1       100.100             MASTER     OK         Persistent
       Address: 47.00918100000001029300121.000000050300.00
       Node name: pswpop6
Remote 5:-1.3:-1       100.101             PARTY      OK         Persistent
       Address: 47.00918100000000c043002de1.000000050300.00
       Node name: pswpop7
Endpoint Reference: 10
```

Step 8 Repeat Steps 6 and 7 to add more parties, one at a time, to the root you created in Step 3.

To display all configured parties for a specific connection, enter the **dsppartiespercon** <*portid*> <*vpi*> <*vci*> command. Replace <*portid*> with the Port identifier whose parties you want to view, in the format. Replace <*vpi*> with the appropriate VPI of the connection, and <*vci*> with the appropriate VCI of the connection.

```
MGX8850.8.PXM.a > dsppartiespercon 5.3 100 100
Port                   Vpi Vci             Owner      State      Persistency
----------------------------------------------------------------------------
5.3          100 100    OK        MASTER  Persistent
Local  Addr: 47.00918100000001029300121.000000050300.00

Remote Party 100 101    OK        PARTY  Persistent
Remote Addr: 47.00918100000000c043002de1.000000050300.00
Endpoint Reference: 101
Remote Party 100 102    OK        PARTY  Persistent
Remote Addr: 47.00918100000000c043002de1.000000050300.00
Endpoint Reference: 102
Port                   Vpi Vci             Owner      State      Persistency
----------------------------------------------------------------------------
5.3          100 100    OK        MASTER  Persistent
Local  Addr: 47.00918100000001029300121.000000050300.00

Remote Party 100 103    OK        PARTY  Persistent
Remote Addr: 47.00918100000000c043002de1.000000050300.00
Endpoint Reference: 103
Remote Party 100 104    OK        PARTY  Persistent
```

Obtaining the NSAP for a Party

To obtain the NSAP for a party, you need to add a slave endpoint at the port on which the desired party will reside, and then delete it. Use the following procedure to obtain the NSAP for a party/slave endpoint.

Step 1 Establish a configuration session with the switch that will host the party, using a user name with GROUP1 privileges or higher.

Step 2 Enter the **cc** command to change to the AXSM card that will host the root of the P2MP connection.

Step 3 At the AXSM prompt, enter the **addcon** command to establish a slave end-point for the master endpoint (or root) that you configured the previous section, as if you are configuring a regular P2P connection.

```
addcon ifNum vpi vci serviceType mastership [-casttype <value>] [-slave <value>]
[-lpcr  <local -> remote PCR>]    [-rpcr  <remote -> local PCR>]
[-lscr  <local -> remote SCR>]    [-rscr  <remote -> local SCR>]
[-lmbs  <local -> remote MBS>]    [-rmbs  <remote -> local MBS>]
[-lcdv  <local -> remote maxCDV>] [-rcdv  <remote -> local maxCDV>]
[-lctd  <local -> remote maxCTD>] [-rctd  <remote -> local maxCTD>]
[-lmcr  <local -> remote MCR>]    [-rmcr  <remote -> local MCR>]
[-cdvt  <local CDVT>] [-cc <OAM CC Cnfg>] [-stat <Stats Cnfg>] [-frame <frame discard>]
[-mc <Max Cost>] [-lputil <local -> remote PUtil>] [-rputil <remote -> local PUtil>]
[-slavepersflag <slavepers>] [-rtngprio <routingPriority>] [-prefrte <preferredRouteId>]
[-intvsvd <internal vsvd config>] [-extvsvd <external vsvd config>]
[-directrte <directRoute>]
```

In the following example, the user adds the slave end of a VCC on logical port 1 with VPI=10, VCI=40, CBR service type.

```
M8950_DC.5.AXSM.a > addcon 1 10 40 1 s
```

```
slave endpoint added successfully
slave endpoint id: 00000E1000001C008051B730FFFFFF010B180100.10.40
```

Note Set the -casttype option to 2, as if this connection is a P2P connection. You will be deleting this endpoint at the end of the procedure

Step 4 Write down the NSAP address the switch displays when the **addcon** command is complete. You will need this to add the party to the root of the P2MP connection.

Step 5 Enter the **delcon** command to delete the connection you added in Step 2.

Step 6 Enter the **dspcon** command to verify that the slave was deleted properly.

After you have the NSAP for a party, you can add that party to a root.

CHAPTER 4

AXSM Card Management

This chapter tells you how to perform the following management tasks for the AXSM card.

- Managing CLI Sessions
- Managing Cards
- Managing Card SCTs
- Managing Port SCTs
- Managing Lines
- Managing Ports
- Managing Resource Partitions
- Managing Connections
- Verifying PNNI Communications
- Managing IMA Groups
- Managing Loopbacks

Managing CLI Sessions

Basic session initialization and management are described in the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5.1*, the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

Table 4-1 lists and describes the session management commands supported on the AXSM cards.

Table 4-1 Session Management Commands

Command	Description	Page
bye	Log out of session	5-49
clidbxlevel	CLI debug level	5-52
clrscrn	Clear screen	5-91
cmdhistory	Command history	5-92
cnfcli	Configure CLI	5-121
core	Core memory dump	-164

Table 4-1 Session Management Commands

Command	Description	Page
dspDevErr	Display device errors	-271
dspDevErrHist	Display device error history	-273
dspfile	Display file	-280
dspframerdiagstat	Display Frame Receive Diagnostics Statistics	-281
dspmempart	Display memory partition	-336
dspmsgq	Display message queue	-339
dspmsgqs	Display message queues	-341
dspsem	Display semaphore	-397
dspsems	Display all semaphores	-399
dsptask	Display task info	-404
dsptasks	Display task list	-406
dspudpdiagcstat	Display user datagram protocol (UDP) diagnostic connection statistics (for the specified port)	-410
dspudpdiagstat	Display user datagram protocol (UDP) diagnostic statistics	-411
dumptrace	Dump trace	-420
exit	Log out of session	-421
help (?)	Help	-422
history	CLI session history	-422
logout	Log out of session	-425
memShow	Show memory map	-426
offdiagcstat	Off diagnostic connection statistics	-427
offdiagstat	Off diagnostics statistics	-428
ondiagcstat	Off diagnostic connection statistics	-429
ondiagstat	On diagnostics statistics	-430
ping	Ping	-431
sesntimeout	Session timeout	-435
sesnwatchdog	Session watchdog	-436
seteng	Set Engineering mode	-437
sfmDBShow	Show statistics file manager	-439
shellConn	Enter shellCon mode	-441
showsyserr	Set system error function on or off	-442
smclrscrn	Service module clear screen	-443
syserr	Show system errors	-449
timeout	Time out to end of session	-450
trace	Show current status of trace	-451
users	Show user session info	-467

Table 4-1 Session Management Commands

Command	Description	Page
who	See details about "who" a user is	-468
whoami	Display user details about currently logged in user	-469

Managing Cards

Basic card initialization and configuration are described in the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5.1*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration*, *Release 1.1.3* documentation.

The following sections provide procedures for doing the following:

- Displaying General Card Information
- Displaying Software Version and Status Information

This section provides procedures for some of the most common card management commands. For a complete list of card management commands, refer to Chapter 5, "AXSM Command Reference."

Displaying General Card Information

To display general information about an AXSM card, enter the **dspcd** command, as shown in the following example:

```
M8850_LA.2.AXSM.a > dspcd

                    Front Card          Upper Card          Lower Card
                    ----------          ----------        ------------

Card Type:          AXSM-4-622          SMFIR-2-622         SMFIR-2-622
State:              Active              Present             Present
Serial Number:      SAK03500088         SBK0446006S         SBK04460020
Boot FW Rev:        5.0(4.34)A          ---                 ---
SW Rev:             5.0(4.34)A          ---                 ---
800-level Rev:      M6                  A1                  A1
Orderable Part#:    800-05774-05        800-05383-01        800-05383-01
PCA Part#:          73-4504-2           73-4125-1           73-4125-1
CLEI Code:          1234567890          BAI9ADTAAA          BAI9ADTAAA
Reset Reason:       Power ON Reset

Card Operating Mode: AXSM-A

SCT File Configured Version: 1

SCT File Operational Version: 1

Card SCT Id: 5


Type <CR> to continue, Q<CR> to stop:
#Lines #Ports #Partitions   #SPVC   #SPVP    #SVC
------ ------ ----------- ------- ------- -------
     2      2           4       0       0       7

Port Group[1]:
#Chans supported:32512  Lines:1.1
```

```
Port Group[2]:
#Chans supported:32512  Lines:1.2
Port Group[3]:
#Chans supported:32512  Lines:2.1
Port Group[4]:
#Chans supported:32512  Lines:2.2
M8850_LA.2.AXSM.a >
```

Displaying Software Version and Status Information

To display information about the boot and runtime software running on an AXSM card, enter the **dspversion** command, as shown in the following example:

```
M8850_LA.2.AXSM.a > dspversion

  Image Type   Shelf Type    Card Type         Version   Built On
  ----------   ----------   ----------    ------------   ------------
     Runtime          MGX         AXSM      5.0(4.34)A   Apr 29 2004, 00:33:39
        Boot          MGX         AXSM      5.0(4.34)A   -

M8850_LA.2.AXSM.a >
```

Managing Card SCTs

The following sections describe how to manage card SCTs using the following tasks:

- Displaying the SCT Assigned to a Card
- Selecting or Changing a Card SCT
- Displaying Card SCT Settings

Displaying the SCT Assigned to a Card

To display the SCT assigned to a card, use the following procedure.

Step 1 Establish a configuration session at any user access level.

Step 2 Change to the card (using the **cc** command) for which you want to display the SCT number.

Step 3 Enter the **dspcd** command:

```
M8850_SF.5.AXSM.a > dspcd
```

The **dspcd** report displays a row labeled “Card SCT Id,” which identifies the SCT assigned to the card as shown in the following example:

```
M8850_SF.5.AXSM.a > dspcd
                    Front Card          Upper Card          Lower Card
                    ----------          ----------        ------------

Card Type:          AXSM-4-622/B        SMFIR-2-622/B       SMFIR-2-622/B
State:              Active              Present             Present
Serial Number:      SAG053456FT         SAK04330082         SAK04190087
Boot FW Rev:        4.9(23.3)A          ---                 ---
SW Rev:             4.9(23.17)A         ---                 ---
800-level Rev:      A0                  02                  02
Orderable Part#:    800-07910-05        800-07412-02        800-07412-02
```

```
PCA Part#:          73-5045-4          73-5087-2          73-5087-2
CLEI Code:          BAA62CWCAA         0                  00
Reset Reason:       Power ON Reset

Card Operating Mode: AXSM-B

SCT File Configured Version: 1

SCT File Operational Version: 1

Card SCT Id: 5


Type <CR> to continue, Q<CR> to stop:
```

Selecting or Changing a Card SCT

A card SCT defines the queue parameters for the destination slot based cell queues towards the backplane. The same card SCT may be used for multiple cards of the same card type. When an AXSM card is powered up for the first time, the default card SCT file is used. The default card SCT is 0.

Note An SCT must be registered before you can select it for a card or port. The exception to this requirement is the default SCT (SCT 0), which is permanently registered. For instructions on registering SCTs, see the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

To select an SCT for a card, use the following procedure.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **cc** command to change to the active service module for which you will select or change an SCT.

```
M8850_LA.8.PXM.a > cc 2

(session redirected)

M8850_LA.2.AXSM.a >
```

Note In a redundant pair, you must specify the SCT on the active card.

Step 3 All ports on the card must be down before you can change the card SCT. To verify the status of the ports on the card, enter the **dspports** command.

```
M8850_LA.2.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt         (VNNI, (EVNNI,EVUNI)
                                            used)           VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
    1  2.1    Up  Down    1412830   1412830   5       NNI      0      0      0
    2  2.2    Up  Down    1412830   1412830   5       NNI      0      0      0
    3  1.1    Up    Up    1412830   1412830   5       NNI      0      0      0
```

Step 4 Enter the **dnallports** command to bring down all ports that are in the Admin State “Up”.

```
M8850_LA.2.AXSM.a > dnallports
dnport/dnallports can disrupt traffic on existing connections.
```

```
Use this command only to modify partition parameters or change SCT
Do you want to proceed (Yes/No) ? y
```

Step 5 Configure the SCT using the **cnfcdsct** command.

cnfcdsct <*sctID*>

Replace *sctID* with the number of the SCT that you want to assign to the card. Table 4-2 describes the SCTID options.

Step 6 To verify the SCT change, enter the **dspcd** command. The displayed report displays a row labeled "Card SCT Id," which identifies the SCT assigned to the card.

Step 7 Enter the **upallports** command to bring up all ports. If you want to bring up ports individually, enter the **upport** command.

```
M8850_LA.2.AXSM.a > upallports
```

Step 8 Enter the **dspports** command to verify that the appropriate ports are up.

```
M8850_LA.1.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt        (VNNI, (EVNNI,EVUNI)
                                            used)          VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
    1  2.1    Up    Up    1412830   1412830   5       NNI      0      0      0
    2  2.2    Up    Up    1412830   1412830   5       NNI      0      0      0
    3  1.1    Up    Up    1412830   1412830   5       NNI      0      0      0
```

Displaying Card SCT Settings

To view the card SCT settings, use the following procedure:

Step 1 Establish a CLI management session at any user access level.

Step 2 Enter the **dspcdsct** command to display the card SCT settings on the current card. Note that the command parameters for the **dspcdsct** command vary according to type of AXSM card you are working on.

To display the card SCT settings on an AXSM/A, AXSM/B, or AXSM-XG card, enter the **dspcdsct** command using the following syntax:

dspcdsct <gen|cosb|vcThr|cosThr>

To display the card SCT settings on an AXSM-E card, enter the **dspcdsct** command, using the following syntax:

dspcdsct <abr|gen|cosb|vcThr|cosThr|qeCosb|qeVcThr>

Select one of the options to display one of the five SCT configuration reports. Table 4-2 describes the reports for each of these options. The following section lists sample reports for each of these options.

Note The option names are case sensitive. For example, the switch does not recognize the **vcthr** option. You must enter **vcThr**.

Table 4-2 Options for dspcdsct Command

Option	Description
abr[1]	Displays ABR pramaters (i.e., abr, gen, cosb, vcThr, cosThr)
gen	Displays general SCT parameters.
cosb	Displays COSB parameters.
vcThr	Displays virtual circuit threshold parameters.
cosThr	Displays COSB threshold parameters.

1. AXSM/E and AXSM-XG only.

The following sections display the reports for each of the **dspcdsct** command options.

Card SCT General SCT Parameters (dspcdsct gen)

The following report appears when you enter the **dspcdsct gen** command:

```
M8850_SF.5.AXSM.a > dspcdsct gen

+-----------------------------------+
| MINOR - VERSION |  MAJOR - VERSION |
| 000000000000001 |  000000000000001 |
+-----------------------------------+
+----------------------------------------------------------------------------------------------------+
Service Class Template [5] : General Parameters
+----------------------------------------------------------------------------------------------------+
| SERV-TYPE | COSB_NUM | CAC_TYPE | UPC_ENB  | CLP-SELEC |    GCRA-1     |    GCRA-2     | CI-CNTRL |
+----------------------------------------------------------------------------------------------------+
| VSI-SIG   | 00000016 |    B-CAC |DISABLED  | 000000002 |       DISCARD |       DISCARD | DISABLED |
| CBR.1     | 00000003 |    B-CAC |DISABLED  | 000000003 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.1  | 00000004 |    B-CAC |DISABLED  | 000000002 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.2  | 00000004 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.3  | 00000004 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       SET-CLP | DISABLED |
| VBR-nRT.1 | 00000005 |    B-CAC |DISABLED  | 000000002 |       DISCARD |       DISCARD | DISABLED |
| VBR-nRT.2 | 00000005 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| VBR-nRT.3 | 00000005 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       SET-CLP | DISABLED |
| UBR.1     | 00000006 |  LCN_CAC |DISABLED  | 000000003 |       DISCARD |       DISCARD | DISABLED |
| UBR.2     | 00000006 |  LCN_CAC |DISABLED  | 000000003 | DSCD/SET-CLP  |       DISCARD | DISABLED |
| ABR       | 00000001 |    B-CAC |DISABLED  | 000000003 |       DISCARD |       DISCARD | DISABLED |
| CBR.2     | 00000003 |    B-CAC |DISABLED  | 000000003 |       DISCARD |       DISCARD | DISABLED |
| CBR.3     | 00000003 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       SET-CLP | DISABLED |
| TagCOS-0c | 00000007 |  LCN_CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| TagCOS-1c | 00000008 |  LCN_CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| TagCOS-2c | 00000009 |  LCN_CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| TagCOS-3c | 00000010 |  LCN_CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| TagCOS-4c | 00000007 |  LCN_CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| TagCOS-5c | 00000008 |  LCN_CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| TagCOS-6c | 00000009 |  LCN_CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| TagCOS-7c | 00000010 |  LCN_CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
+----------------------------------------------------------------------------------------------------+
```

Card SCT COSB Parameters (dspcdsct cosb)

The following report appears when you enter the **dspcdsct cosb** command:

```
M8850_SF.5.AXSM.a > dspcdsct cosb

+-----------------------------------+
| MINOR - VERSION |  MAJOR - VERSION |
| 000000000000001 |  000000000000001 |
+-----------------------------------+
+-----------------------------------------------------+
| Service Class Template [05] : COSB Parameters
+-----------------------------------------------------+
|   COSB   | MIN-PRIORITY | EXCESS-PRIORITY | ERS ENABLE |
+-----------------------------------------------------+
| 00000001 |          002 |             002 |     ENABLE |
| 00000002 |          002 |             002 |     ENABLE |
| 00000003 |          000 |             000 |    DISABLE |
| 00000004 |          001 |             001 |    DISABLE |
| 00000005 |          002 |             001 |    DISABLE |
| 00000006 |          004 |             007 |    DISABLE |
| 00000007 |          002 |             008 |    DISABLE |
| 00000008 |          002 |             006 |    DISABLE |
| 00000009 |          002 |             005 |    DISABLE |
| 00000010 |          002 |             004 |    DISABLE |
| 00000011 |          002 |             002 |    DISABLE |
| 00000012 |          002 |             002 |    DISABLE |
| 00000013 |          002 |             002 |    DISABLE |
| 00000014 |          002 |             002 |    DISABLE |
| 00000015 |          002 |             002 |    DISABLE |
| 00000016 |          001 |             000 |    DISABLE |
+-----------------------------------------------------+
```

Card SCT Virtual Circuit Threshold Parameters (dspcdsct vcThr)

The following report appears when you enter the **dspcdsct vcThr** command:

```
M8850_SF.5.AXSM.a > dspcdsct vcThr

+-----------------------------------+
| MINOR - VERSION |  MAJOR - VERSION |
| 000000000000001 |  000000000000001 |
+-----------------------------------+
+---------------------------------------------------------------------------------+
Service Class Template [5] : VC Threshold Parameters
+---------------------------------------------------------------------------------+
| SERV-TYPE | MAX_CELL  |  EFCI   | CLP_HI  |  EPD0   | CLP_LO  | SCALING | SCALING |
|           | THRESH    |         |         |         | EPD1    | COSB    | Log-If  |
+---------------------------------------------------------------------------------+
| VSI-SIG   | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| CBR.1     | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| VBR-RT.1  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-RT.2  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-RT.3  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.1 | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.2 | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.3 | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| UBR.1     | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| UBR.2     | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| ABR       | 0000050000 | 0200000 | 0800000 | 0600000 | 0800000 | 0000003 | 0000003 |
| CBR.2     | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| CBR.3     | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| TagCOS-0c | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
```

```
| TagCOS-1c | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| TagCOS-2c | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000003 | 0000003 |
| TagCOS-3c | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| TagCOS-4c | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| TagCOS-5c | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| TagCOS-6c | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| TagCOS-7c | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
+-----------------------------------------------------------------------------------+
```

Card SCT COSB Threshold Parameters (dspcdsct cosThr)

The following report appears when you enter the **dspcdsct cosThr** command:

```
M8850_SF.5.AXSM.a > dspcdsct cosThr

+------------------------------------+
| MINOR - VERSION |  MAJOR - VERSION |
| 000000000000001 |  000000000000001 |
+------------------------------------+

+--------------------------------------------------------------------------------------+
Service Class Template [00005] : COSB Threshold Parameters
+--------------------------------------------------------------------------------------+
| COSB | MAX_CELL  |  EFCI   | CLP_HI  |  EPD0   | CLP_LO  |   RED   |
|      | THRESH   |         |         |         |  EPD1   |         |
+-----------------------------------------------------------------------------------+
| 0001 |  1000000   | 0200000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0002 |  1000000   | 0200000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0003 |     5000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0004 |    10000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0005 |    50000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0006 |   100000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0007 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0008 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0009 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0010 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0011 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0012 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0013 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0014 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0015 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
| 0016 |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 |
+--------------------------------------------------------------------------------------------------+
```

Managing Port SCTs

The following sections describe how to manage port SCTs using the following tasks:

- Displaying the SCT Assigned to a Port
- Selecting a Port SCT
- Changing a Port SCT
- Displaying Port SCT Settings

Displaying the SCT Assigned to a Port

To display the SCT assigned to a port, use the following procedure.

Step 1 Establish a configuration session at any user access level.

Step 2 Enter the following command:

```
M8850_SF.5.AXSM.a >  dspports
```

The **dspports** report displays a column labeled “Port SCT Id,” which identifies the SCT assigned to each port.

```
M8850_SF.5.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt        (VNNI, (EVNNI,EVUNI)
                                            used)          VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
    1  1.1    Up  Down      10000     10000   0       NNI      0      0      0
    2  1.2    Up  Down      10000     10000   0       NNI      0      0      0
   22  2.2  Down    Up    1412830   1412830   5       NNI      0      0      0
```

Selecting a Port SCT

A port SCT defines queue parameters that apply to egress queues on a port. You can use the same port SCT for multiple ports. Port SCTs can be changed with connections provisioned on the port. However, the port needs to be administratively downed to effect this change. Hence this is service affecting.

To select an SCT for an ATM port, enter the **addport** command as described in the “Adding ATM Ports” section on page 3-27.

For information on managing port SCTs on AXSM cards, refer to “Managing Card SCTs” section on page 4-4.

For informationdownloading, installing, and registering SCTs, see the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Note A port SCT must reside in your PXM F:/SCT directory before you can select it for a port.

Note An SCT must be registered before you can select it for a card or port. The exception to this requirement is the default SCT (SCT 0), which is permanently registered.

Changing a Port SCT

To change the SCT assigned to a port, enter the **cnfport** command as follows:

```
M8850_SF.5.AXSM.a > cnfport -if <ifNum> -sct <sctID>
```

Replace <*ifNum*> with the number of the logical interface (port) whose SCT you want to change.
Replace <*sctID*> with the number of a service class template (SCT) you want the port to use, in the range from 0 through 255.

Note Enter the **dspports** command to see a list of all port numbers on the current card.

Cisco provides SCT numbers 2, 3, 4, and 5. You can modify one of these SCTs through the Cisco WAN Manager application and assign a number in the range 6–255 to the new SCT. Subsequently, you can assign the new SCT to the port with the *sctID* parameter in **cnfport**. To see the ID of the current SCT for this port, use **dspport**. To see the parameters within the current SCT, use the **dspportsct** command.

Note An SCT must be registered before you can select it for a card or port. The exception to this requirement is the default SCT (SCT 0), which is permanently registered. For instructions on registering SCTs, see the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Displaying Port SCT Settings

To view the port SCT settings, use the following procedure.

Step 1 Establish a CLI management session at any user access level.

Step 2 Enter the **dspportsct** command to display the port SCT settings on the current card. Note that the command parameters for the **dspportsct** command vary according to type of AXSM card you are working on.

To display the port SCT settings on an AXSM/A, AXSM/B, or AXSM-XG card, enter the **dspportsct** command as follows:

```
M8850_SF.5.AXSM.a > dspportsct <bw|gen|cosb|vcThr|cosThr> <ifNum>
```

To display the port SCT settings on an AXSM-E card, enter the **dspportsct** command as follows:

```
M8850_LA.12.AXSME.a > dspportsct <abr|gen|cosb|vcThr|cosThr|qeCosb|qeVcThr> <ifNum>
```

Select one of the options to display one of the five SCT configuration reports, and replace <*ifNum*> with the number of the port you want to view. Table 4-3 describes the reports for each of these options.

Note The option names are case sensitive. The switch does not recognize the **vcthr** option. You must enter **vcThr**.

Table 4-3 Options for dspportsct Command

Option	Description
abr	Displays ABR pramaters (i.e., abr, gen, cosb, vcThr, cosThr)[1]
gen	Displays general SCT parameters.
cosb	Displays COSB parameters.
vcThr	Displays virtual circuit threshold parameters.
cosThr	Displays COSB threshold parameters.
if	Displays interface between 1 and 126.

1. AXSM/E and AXSM-XG only.

The sections that follow display the reports for each of the **dspportsct** command options.

Port SCT General Parameters (dspportsct gen)

The **dspportsct gen** command output varies slightly according to type of AXSM card you are working on.

The following report appears when you enter the **dspportsct gen** command on the AXSM/A or AXSM/B card:

```
mgx8850.1.AXSM.a > dspportsct gen 1
+-----------------------------------------------------------------------------------------+
Service Class Template [2]: General Parameters
+-----------------------------------------------------------------------------------------+
| SERV-TYPE | COSB_NUM | CAC_TYPE | UPC_ENB  | CLP-SELEC |    GCRA-1    |    GCRA-2    | CI-CNTRL |
+-----------------------------------------------------------------------------------------+
| CBR.1     | 00000003 |    B-CAC |GCRA1-ENB | 000000003 |      DISCARD |      DISCARD | DISABLED |
| VBR-RT.1  | 00000004 |    B-CAC |GCRA 1 & 2| 000000002 |      DISCARD |      DISCARD | DISABLED |
| VBR-RT.2  | 00000004 |    B-CAC |GCRA 1 & 2| 000000001 |      DISCARD |      DISCARD | DISABLED |
| VBR-RT.3  | 00000004 |    B-CAC |GCRA 1 & 2| 000000001 |      DISCARD |      SET-CLP | DISABLED |
| VBR-nRT.1 | 00000005 |    B-CAC |GCRA 1 & 2| 000000002 |      DISCARD |      DISCARD | DISABLED |
| VBR-nRT.2 | 00000005 |    B-CAC |GCRA 1 & 2| 000000001 |      DISCARD |      DISCARD | DISABLED |
| VBR-nRT.3 | 00000005 |    B-CAC |GCRA 1 & 2| 000000001 |      DISCARD |      SET-CLP | DISABLED |
| UBR.1     | 00000006 |  LCN_CAC |GCRA1-ENB | 000000003 |      DISCARD |      DISCARD | DISABLED |
| UBR.2     | 00000006 |  LCN_CAC |GCRA1-ENB | 000000003 | DSCD/SET-CLP |      DISCARD | DISABLED |
| ABR       | 00000001 |    B-CAC |GCRA1-ENB | 000000003 |      DISCARD |      DISCARD | DISABLED |
+-----------------------------------------------------------------------------------------+
```

The following report appears when you enter the **dspportsct gen** command on the AXSM-E card:

```
M8850_LA.12.AXSME.a > dspportsct gen 1

Service Class Template [  0] : General Parameters
Major Version [  1]          : Minor Version [  0]
+----------------------------------------------------------+
| SERV-TYPE(DEC)  | COSB_NUM | CAC_TYPE |  UPC_ENB   | WFQ_ENB  |
+----------------------------------------------------------+
| VSI_DEFAULT(  1)|     1    |     BCAC | DISABLED   | DISABLED |
|  VSI_SIGNAL(  2)|     1    |     BCAC | DISABLED   |  ENABLED |
|   ATMF_CBR1(256)|     4    |     BCAC | GCRA1-ENB  | DISABLED |
| ATMF_VBRrt1(257)|     5    |     BCAC | GCRA 1 & 2 | DISABLED |
| ATMF_VBRrt2(258)|     5    |     BCAC | GCRA 1 & 2 | DISABLED |
| ATMF_VBRrt3(259)|     5    |     BCAC | GCRA 1 & 2 | DISABLED |
|ATMF_VBRnrt1(260)|     6    |     BCAC | GCRA 1 & 2 | DISABLED |
|ATMF_VBRnrt2(261)|     6    |     BCAC | GCRA 1 & 2 | DISABLED |
|ATMF_VBRnrt3(262)|     6    |     BCAC | GCRA 1 & 2 | DISABLED |
|   ATMF_UBR1(263)|     7    |  LCN_CAC | GCRA1-ENB  | DISABLED |
|   ATMF_UBR2(264)|     7    |  LCN_CAC | GCRA1-ENB  | DISABLED |
|    ATMF_ABR(265)|     2    |     BCAC | GCRA1-ENB  | DISABLED |
|   ATMF_CBR2(266)|     4    |     BCAC | GCRA 1 & 2 | DISABLED |
|   ATMF_CBR3(267)|     4    |     BCAC | GCRA 1 & 2 | DISABLED |
|    TAG_COS0(512)|     8    |  LCN_CAC | DISABLED   | DISABLED |
|    TAG_COS1(513)|     9    |  LCN_CAC | DISABLED   | DISABLED |

Type <CR> to continue, Q<CR> to stop:
|    TAG_COS2(514)|    10    |  LCN_CAC | DISABLED   | DISABLED |
|    TAG_COS3(515)|    11    |  LCN_CAC | DISABLED   | DISABLED |
|    TAG_COS4(516)|     8    |  LCN_CAC | DISABLED   | DISABLED |
|    TAG_COS5(517)|     9    |  LCN_CAC | DISABLED   | DISABLED |
```

```
|    TAG_COS6(518)|      10    |  LCN_CAC | DISABLED    | DISABLED |
|    TAG_COS7(519)|      11    |  LCN_CAC | DISABLED    | DISABLED |
| TAG_COS_ABR(528)|       3    |  LCN_CAC | DISABLED    | DISABLED |
+-----------------------------------------------------------------+
+----------------------------------------------------------------------+
| SERV-TYPE(DEC)  |  UPC_SELECT  |    GCRA1_PLCY     |    GCRA2_PLCY     |
|                 |  BKT1_BKT2   |                   |                   |
+----------------------------------------------------------------------+
| VSI_DEFAULT(  1)|    CLP01_CLP0|            DISCARD|            DISCARD|
|  VSI_SIGNAL(  2)|    CLP01_CLP0|            DISCARD|            DISCARD|
|   ATMF_CBR1(256)|    CLP01_DISC|            DISCARD|            DISCARD|
| ATMF_VBRrt1(257)|   CLP01_CLP01|            DISCARD|            DISCARD|
| ATMF_VBRrt2(258)|    CLP01_CLP0|            DISCARD|            DISCARD|
| ATMF_VBRrt3(259)|    CLP01_CLP0|            DISCARD|            SET_CLP|
|ATMF_VBRnrt1(260)|   CLP01_CLP01|            DISCARD|            DISCARD|
|ATMF_VBRnrt2(261)|    CLP01_CLP0|            DISCARD|            DISCARD|
|ATMF_VBRnrt3(262)|    CLP01_CLP0|            DISCARD|            SET_CLP|
|   ATMF_UBR1(263)|    CLP01_DISC|            DISCARD|            DISCARD|

Type <CR> to continue, Q<CR> to stop:
|   ATMF_UBR2(264)|    CLP01_DISC|SET_CLP_DISC_TAGD|            DISCARD|
|    ATMF_ABR(265)|    CLP01_DISC|            DISCARD|            DISCARD|
|   ATMF_CBR2(266)|    CLP01_DISC|            DISCARD|            DISCARD|
|   ATMF_CBR3(267)|    CLP01_CLP0|            DISCARD|            SET_CLP|
|    TAG_COS0(512)|    CLP01_DISC|            DISCARD|            DISCARD|
|    TAG_COS1(513)|    CLP01_DISC|            DISCARD|            DISCARD|
|    TAG_COS2(514)|    CLP01_DISC|            DISCARD|            DISCARD|
|    TAG_COS3(515)|    CLP01_CLP0|            DISCARD|            DISCARD|
|    TAG_COS4(516)|    CLP01_CLP0|            DISCARD|            DISCARD|
|    TAG_COS5(517)|    CLP01_CLP0|            DISCARD|            DISCARD|
|    TAG_COS6(518)|    CLP01_CLP0|            DISCARD|            DISCARD|
|    TAG_COS7(519)|    CLP01_CLP0|            DISCARD|            DISCARD|
| TAG_COS_ABR(528)|    CLP01_CLP0|            DISCARD|            DISCARD|
+----------------------------------------------------------------------+

M8850_LA.12.AXSME.a >
```

The following report appears when you enter the **dspportsct gen** command on the AXSM-XG card:

```
M8950_SF.15.AXSMXG.a > dspportsct gen 1

Service Class Template [  0] : General Parameters
Major Version [  1]          : Minor Version [  0]
+-----------------------------------------------------------------+
| SERV-TYPE(DEC)  | COSB_NUM | CAC_TYPE |  UPC_ENB    | WFQ_ENB  |
+-----------------------------------------------------------------+
| VSI_DEFAULT(  1)|       1    |     BCAC | DISABLED    | DISABLED |
|  VSI_SIGNAL(  2)|       1    |     BCAC | DISABLED    | DISABLED |
|   ATMF_CBR1(256)|      11    |     BCAC | DISABLED    | DISABLED |
| ATMF_VBRrt1(257)|      12    |     BCAC | DISABLED    | DISABLED |
| ATMF_VBRrt2(258)|      12    |     BCAC | DISABLED    | DISABLED |
| ATMF_VBRrt3(259)|      12    |     BCAC | DISABLED    | DISABLED |
|ATMF_VBRnrt1(260)|      13    |     BCAC | DISABLED    | DISABLED |
|ATMF_VBRnrt2(261)|      13    |     BCAC | DISABLED    | DISABLED |
|ATMF_VBRnrt3(262)|      13    |     BCAC | DISABLED    | DISABLED |
|   ATMF_UBR1(263)|      14    |  LCN_CAC | DISABLED    | DISABLED |
|   ATMF_UBR2(264)|      14    |  LCN_CAC | DISABLED    | DISABLED |
|    ATMF_ABR(265)|      15    |     BCAC | DISABLED    |  ENABLED |
|   ATMF_CBR2(266)|      11    |     BCAC | DISABLED    | DISABLED |
|   ATMF_CBR3(267)|      11    |     BCAC | DISABLED    | DISABLED |
|    TAG_COS0(512)|       6    |  LCN_CAC | DISABLED    | DISABLED |
|    TAG_COS1(513)|       7    |  LCN_CAC | DISABLED    | DISABLED |

Type <CR> to continue, Q<CR> to stop:
```

```
|     TAG_COS2(514)|       8    |  LCN_CAC | DISABLED    | DISABLED |
|     TAG_COS3(515)|       9    |  LCN_CAC | DISABLED    | DISABLED |
|     TAG_COS4(516)|       6    |  LCN_CAC | DISABLED    | DISABLED |
|     TAG_COS5(517)|       7    |  LCN_CAC | DISABLED    | DISABLED |
|     TAG_COS6(518)|       8    |  LCN_CAC | DISABLED    | DISABLED |
|     TAG_COS7(519)|       9    |  LCN_CAC | DISABLED    | DISABLED |
| TAG_COS_ABR(528)|      10    |     BCAC | DISABLED    | DISABLED |
+-----------------------------------------------------------------+
+----------------------------------------------------------------------+
| SERV-TYPE(DEC)   |  UPC_SELECT   |    GCRA1_PLCY     |    GCRA2_PLCY     |
|                  |  BKT1_BKT2    |                   |                   |
+----------------------------------------------------------------------+
| VSI_DEFAULT(  1)|     CLP01_CLP0|           DISCARD|           DISCARD|
|  VSI_SIGNAL(  2)|     CLP01_CLP0|           DISCARD|           DISCARD|
|   ATMF_CBR1(256)|     CLP01_DISC|           DISCARD|           DISCARD|
| ATMF_VBRrt1(257)|    CLP01_CLP01|           DISCARD|           DISCARD|
| ATMF_VBRrt2(258)|     CLP01_CLP0|           DISCARD|           DISCARD|
| ATMF_VBRrt3(259)|     CLP01_CLP0|           DISCARD|           SET_CLP|
|ATMF_VBRnrt1(260)|    CLP01_CLP01|           DISCARD|           DISCARD|
|ATMF_VBRnrt2(261)|     CLP01_CLP0|           DISCARD|           DISCARD|
|ATMF_VBRnrt3(262)|     CLP01_CLP0|           DISCARD|           SET_CLP|
|   ATMF_UBR1(263)|     CLP01_DISC|           DISCARD|           DISCARD|

Type <CR> to continue, Q<CR> to stop:
|   ATMF_UBR2(264)|     CLP01_DISC|SET_CLP_DISC_TAGD|           DISCARD|
|    ATMF_ABR(265)|     CLP01_DISC|           DISCARD|           DISCARD|
|   ATMF_CBR2(266)|     CLP01_DISC|           DISCARD|           DISCARD|
|   ATMF_CBR3(267)|     CLP01_CLP0|           DISCARD|           SET_CLP|
|    TAG_COS0(512)|     CLP01_DISC|           DISCARD|           DISCARD|
|    TAG_COS1(513)|     CLP01_DISC|           DISCARD|           DISCARD|
|    TAG_COS2(514)|     CLP01_DISC|           DISCARD|           DISCARD|
|    TAG_COS3(515)|     CLP01_CLP0|           DISCARD|           DISCARD|
|    TAG_COS4(516)|     CLP01_CLP0|           DISCARD|           DISCARD|
|    TAG_COS5(517)|     CLP01_CLP0|           DISCARD|           DISCARD|
|    TAG_COS6(518)|     CLP01_CLP0|           DISCARD|           DISCARD|
|    TAG_COS7(519)|     CLP01_CLP0|           DISCARD|           DISCARD|
| TAG_COS_ABR(528)|     CLP01_CLP0|           DISCARD|           DISCARD|
+----------------------------------------------------------------------+

M8950_SF.15.AXSMXG.a >
```

Table 4-4 describes the SCT General Parameters shown in the examples.

Table 4-4 SCT General Parameter Descriptions

Parameter	Range	Description
SERV-TYPE		The service type (for example, CBR, VBR, ABR) to which the parameters in this table apply (for example, COSB_NUM, CAC_TYPE, UPC_ENB).
COSB_NUM	1 to 16	Class of Service Buffer Number. The number that identifies one of the sixteen CoS buffers. A CoS buffer is a buffer that services connections with similar QoS requirements.
CAC_TYPE		Connection Admission Control. Used by an ATM switch during setup to determine if a connection requested QoS conforms to the guaranteed QoS standards for ATM connections. LCN_CAC: Logical Connection Number CAC B_CAC: Basic - CAC E_CAC: Enhanced - CAC

Table 4-4 SCT General Parameter Descriptions (continued)

Parameter	Range	Description
UPC_ENB		Usage Parameter Control Enable. Enables or disables GCRA policing functions on the connection. GCRA1-ENB: Enables GCRA1 only. GCRA 1 and 2: Enables both GCRA1 and GCRA2.
CLP-SELEC	1 to 4	Cell Loss Priority Select. Specifies whether a bucket will police for CLP (0+1) or CLP (0) in the dual leaky bucket policing action. 1 - Bucket 1: CLP (0+1) - Bucket 2: CLP (0) 2 - Bucket 1: CLP (0+1) - Bucket 2: CLP (0+1) 3 - Bucket 1: CLP (0+1) - Bucket 2: Disabled 4 - Bucket 1: CLP (0+1) with Maximum Frame Size (MFS) **Note** This parameter is available on AXSM/A and AXSM/B cards only.
UPC_SELEC		Usage Parameter Control Select. Enables or disables GCRA policing functions on the connection. Specifies whether a bucket will police for UPC (0+1) or UPC (0) in the dual leaky bucket policing action. 1 - Bucket 1: UPC (0+1) - Bucket 2: UPC (0) 2 - Bucket 1: UPC (0+1) - Bucket 2: UPC (0+1) 3 - Bucket 1: UPC (0+1) - Bucket 2: Disabled 4 - Bucket 1: UPC (0+1) with Maximum Frame Size (MFS)2. **Note** This parameter is available on AXSM-E and AXSM-XG cards only.
GCRA-1	1 to 3	Generic Cell Rate Algorithm – Bucket 1. In ATM, an algorithm that defines conformance with respect to the traffic contract of the connection. For each cell arrival, the GCRA determines whether the cell conforms to the traffic contract. **Note** If UPC-Enable is set to disable, this object is not used. Choose one of the following options to indicate how cells that fail the first bucket of the policer should be handled: • 1–Discard • 2–Set CLP bit • 3–Set CLP of untagged cells, discard tagged cells.

Table 4-4 SCT General Parameter Descriptions (continued)

Parameter	Range	Description
GCRA-2	1 to 3	Generic Cell Rate Algorithm – Bucket 2. In ATM, an algorithm that defines conformance with respect to the traffic contract of the connection. For each cell arrival, the GCRA determines whether the cell conforms to the traffic contract. **Note** If UPC-Enable is set to disable, this object is not used. Choose one of the following options to indicate how cells that fail the second bucket of the policer should be handled: 1 - Discard 2 - Set CLP bit 3 - Set CLP of untagged cells, discard tagged cells.
CI-CNTRL	1 - Enabled 2 - Disabled	Congestion Indication Control. Indicates whether the EFCI Threshold has been exceeded.
WFQ_ENB	Enabled Disabled	**Note** this parameter is available on AXSM-E and AXSM-XG cards only.

Port SCT COSB Parameters (cosb)

The **dspportsct cosb** command output varies slightly according to type of AXSM card you are working on.

The following report appears when you enter the **dspportsct cosb** command on an AXSM/A or AXSM/B card:

```
M8850_LA.1.AXSM.a > dspportsct cosb 11

+-----------------------------------+
| MINOR - VERSION |  MAJOR - VERSION |
| 000000000000001 |  000000000000001 |
+-----------------------------------+
+-------------------------------------------------------+
| Service Class Template [05] : COSB Parameters
+-------------------------------------------------------+
|   COSB    | MIN-PRIORITY | EXCESS-PRIORITY | ERS ENABLE |
+-------------------------------------------------------+
| 00000001 |          002 |             002 |     ENABLE |
| 00000002 |          002 |             002 |     ENABLE |
| 00000003 |          000 |             000 |    DISABLE |
| 00000004 |          001 |             001 |    DISABLE |
| 00000005 |          002 |             001 |    DISABLE |
| 00000006 |          004 |             007 |    DISABLE |
| 00000007 |          002 |             008 |    DISABLE |
| 00000008 |          002 |             006 |    DISABLE |
| 00000009 |          002 |             005 |    DISABLE |
| 00000010 |          002 |             004 |    DISABLE |
| 00000011 |          002 |             002 |    DISABLE |
| 00000012 |          002 |             002 |    DISABLE |
| 00000013 |          002 |             002 |    DISABLE |
| 00000014 |          002 |             002 |    DISABLE |
```

```
| 00000015 |          002 |             002 |    DISABLE |
| 00000016 |          001 |             000 |    DISABLE |
+----------------------------------------------------------+


M8850_LA.1.AXSM.a >
```

The following report appears when you enter the **dspportsct cosb** command on an AXSM-E card:

```
M8850_LA.12.AXSME.a > dspportsct cosb 1
+---------------------------------------------------------------+
| Service Class Template [  0] : COSB Parameters                |
| Major Version [  1]          : Minor Version [  0]            |
+---------------------------------------------------------------+
|COSB| MIN-RATE| MAX-RATE| EXCESS | CELL DISC |     ERS     |CLR|
|NUM |         |         |PRIORITY| ALARM     |             |   |
+---------------------------------------------------------------+
|  1 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  6|
|  2 |       0 | 1000000 |     2  | DISABLED  | DISABLED  |  6|
|  3 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  6|
|  4 |       0 | 1000000 |     0  | DISABLED  | DISABLED  | 10|
|  5 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  8|
|  6 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  6|
|  7 |       0 | 1000000 |     2  | DISABLED  | DISABLED  |  6|
|  8 |       0 | 1000000 |     0  | DISABLED  | DISABLED  |  6|
|  9 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  6|
| 10 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  6|
| 11 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  6|
| 12 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  0|
| 13 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  0|
| 14 |       0 | 1000000 |     1  | DISABLED  | DISABLED  |  0|
| 15 |       0 | 1000000 |     2  | DISABLED  | DISABLED  |  0|

Type <CR> to continue, Q<CR> to stop:
| 16 |       0 |  500000 |     1  | DISABLED  | DISABLED  |  0|
+-------------------------------------------------------------+

M8850_LA.12.AXSME.a >
```

The following report appears when you enter the **dspportsct cosb** command on an AXSM-XG card:

```
M8950_SF.15.AXSMXG.a > dspportsct cosb 1
+-------------------------------------------------------------------+
| Service Class Template [  0] : COSB Parameters                    |
| Major Version [  1]          : Minor Version [  0]                |
+-------------------------------------------------------------------+
|COSB| MIN-RATE| MAX-RATE|  MIN    | EXCESS  | RSD  |     ERS     |CLR|
|NUM |         |         |PRIORITY|PRIORITY|      |             |   |
+-------------------------------------------------------------------+
|  1 |  500000 |  500000 |    10   |     1   |    1 | DISABLED   |  0|
|  2 |  500000 |  500000 |    10   |     1   |    1 | DISABLED   |  0|
|  3 |  500000 |  500000 |    10   |     1   |    1 | DISABLED   |  0|
|  4 |  500000 |  500000 |    10   |     1   |    1 | DISABLED   |  0|
|  5 |  500000 |  500000 |    10   |     1   |    1 | DISABLED   |  0|
|  6 |       0 | 1000000 |    10   |     0   |    1 | DISABLED   |  0|
|  7 |       0 | 1000000 |    10   |     1   |    1 | DISABLED   |  0|
|  8 |       0 | 1000000 |    10   |     1   |    1 | DISABLED   |  0|
|  9 |       0 | 1000000 |    10   |     0   |    1 | DISABLED   |  0|
| 10 |       0 | 1000000 |    10   |     1   |    1 | DISABLED   |  0|
| 11 |       0 | 1000000 |    10   |     0   |    0 | DISABLED   |  0|
| 12 |       0 | 1000000 |    10   |     1   |    1 | DISABLED   |  0|
| 13 |       0 | 1000000 |    10   |     1   |    1 | DISABLED   |  0|
| 14 |       0 | 1000000 |    10   |     1   |    1 | DISABLED   |  0|
| 15 |       0 | 1000000 |    10   |     2   |    1 | DISABLED   |  0|
```

```
Type <CR> to continue, Q<CR> to stop:
| 16 |  500000 |  500000 |    10  |     1  |    1 | DISABLED  |  0|
+-------------------------------------------------------------------+

M8950_SF.15.AXSMXG.a >
```

Table 4-5 describes the SCT COSB parameters shown in the examples.

Table 4-5 SCT COSB Parameter Descriptions

Label	Range and Units	Description
COSB	N.A.	Class of Service Buffer. A buffer or queue which serves connections with similar QoS requirements. **Note** this parameter is available on AXSM/A and AXSM/B cards only.
COSB NUM	N.A.	Class of Service Buffer. A buffer or queue which serves connections with similar QoS requirements. **Note** this parameter is available on AXSM-E and AXSM-XG cards only.
MIN-RATE	1–1000000	Indicates the minimum bandwidth allocated for the COSB. The MIN-RATE is represented as a percentage of the logical interface minimum rate. A value of 1000000 is equal to 100%, **Note** This parameter is available on AXSM-E and AXSM-XG cards only.
MAX-RATE	1–1000000	Indicates the maximum guaranteed bandwidth allocated for the COSB. A value of 1000000 is equal to 100%, **Note** This parameter is available on AXSM-E and AXSM-XG cards only.
MIN-PRIORITY	0–15	The priority at which this COSB will be serviced to guarantee its minimum and maximum bandwidth requirements. • 0 is highest priority • 15 is lowest priority **Note** this parameter is available on AXSM/A, AXSM/B, and AXSM-XG cards only.
EXCESS-PRIORITY	0–15	The priority at which this COSB will be given access to excess bandwidth. • 0 is highest priority • 15 is lowest priority
ERS ENABLE	1 - Enabled 2 - Disabled	Indicates whether ERS[1] is enabled or disabled. **Note** The AXSM-E and AXSM-XG output shows this parameter simply as *ERS*.

Table 4-5 SCT COSB Parameter Descriptions (continued)

Label	Range and Units	Description
CLR	1–15	Cell Loss Ratio for this COSB. The minimum supported CLR is 10^{-6} and maximum supported CLR is 10^{-10} **Note** This parameter is available on AXSM-E and AXSM-XG cards only.
RSD	1–15	RSD for this COSB. The minimum supported CLR is 10^{-6} and maximum supported CLR is 10^{-10} **Note** This parameter is available on the AXSM-XG card only.
CELL DISC ALARM	Enabled Disabled	Enables/disables discard alarms on the COSB. **Note** This parameter is available on the AXSM-E card only.

1 ERS = Explicit Rate Stamping

Port SCT Virtual Circuit Threshold Parameters (vcThr)

The **dspportsct vcThr** command output varies slightly according to type of AXSM card you are working on.

The following report appears when you enter the **dspportsct vcThr** command on an AXSM/A or AXSM/B card:

```
M8850_SF.5.AXSM.a > dspportsct vcThr 1

+-------------------------------------+
| MINOR - VERSION |  MAJOR - VERSION |
| 000000000000000 |  000000000000000 |
+-------------------------------------+
+------------------------------------------------------------------------------------+
Service Class Template [0] : VC Threshold Parameters
+------------------------------------------------------------------------------------+
| SERV-TYPE | MAX_CELL   |   EFCI    | CLP_HI   |   EPD0    | CLP_LO   | SCALING | SCALING |
|           | THRESH     |           |          |           | EPD1     | COSB    | Log-If  |
+------------------------------------------------------------------------------------+
+------------------------------------------------------------------------------------+

M8850_SF.5.AXSM.a >
```

The following report appears when you enter the **dspportsct vcThr** command on an AXSM-E card:

```
M8850_LA.4.AXSME.a > dspportsct vcThr 15

Service Class Template [  0] : VC Threshold Parameters
Major Version [  1]          : Minor Version [  0]
+-----------------------------------------------------------+
|  SERV TYPE(DEC)  | MAX_CELL   |   EFCI   | CLPlo/EPD|   CLPhi   |
|                  | THR(cells)|  (cells) | (cells)  |  (cells) |
+-----------------------------------------------------------+
| VSI_DEFAULT(  1)|      960   |      576 |      288 |      720 |
|  VSI_SIGNAL(  2)|      300   |      250 |      250 |      300 |
|    ATMF_CBR1(256)|      240   |      240 |      192 |      192 |
| ATMF_VBRrt1(257)|      480   |      480 |      384 |      384 |
```

```
| ATMF_VBRrt2(258)|     480   |      480 |      384 |      384 |
| ATMF_VBRrt3(259)|     480   |      480 |      384 |      384 |
|ATMF_VBRnrt1(260)|    2400   |     2400 |     1920 |     1920 |
|ATMF_VBRnrt2(261)|    2400   |     2400 |     1920 |     1920 |
|ATMF_VBRnrt3(262)|    2400   |     2400 |     1920 |     1920 |
|   ATMF_UBR1(263)|    4800   |     4800 |     3840 |     3840 |
|   ATMF_UBR2(264)|    4800   |     4800 |     3840 |     3840 |
|    ATMF_ABR(265)|    4800   |      960 |     3840 |     3840 |
|   ATMF_CBR2(266)|     240   |      240 |      192 |      192 |
|   ATMF_CBR3(267)|     240   |      240 |      192 |      192 |
|    TAG_COS0(512)|    4800   |     2880 |     1440 |     3360 |

Type <CR> to continue, Q<CR> to stop:
|    TAG_COS1(513)|    4800   |     2880 |     1440 |     3360 |
|    TAG_COS2(514)|    4800   |     2880 |     1440 |     3360 |
|    TAG_COS3(515)|    4800   |     2880 |     1440 |     3360 |
|    TAG_COS4(516)|    4800   |     2880 |     1440 |     3360 |
|    TAG_COS5(517)|    4800   |     2880 |     1440 |     3360 |
|    TAG_COS6(518)|    4800   |     2880 |     1440 |     3360 |
|    TAG_COS7(519)|    4800   |     2880 |     1440 |     3360 |
| TAG_COS_ABR(528)|    4800   |     2880 |     1440 |     3360 |
+--------------------------------------+
|  SERV TYPE(DEC) | SCALING |PKT DISCARD|
|                 |  CLASS  |   ENABLE  |
+--------------------------------------+
| VSI_DEFAULT(  1)|    3    |  DISABLED |
|  VSI_SIGNAL(  2)|    4    |  DISABLED |
|   ATMF_CBR1(256)|    1    |  DISABLED |
| ATMF_VBRrt1(257)|    2    |  DISABLED |
| ATMF_VBRrt2(258)|    2    |  DISABLED |
| ATMF_VBRrt3(259)|    2    |  DISABLED |
|ATMF_VBRnrt1(260)|    2    |  DISABLED |
|ATMF_VBRnrt2(261)|    2    |  DISABLED |
|ATMF_VBRnrt3(262)|    2    |  DISABLED |
|   ATMF_UBR1(263)|    4    |  DISABLED |

Type <CR> to continue, Q<CR> to stop:
|   ATMF_UBR2(264)|    4    |  DISABLED |
|    ATMF_ABR(265)|    3    |  DISABLED |
|   ATMF_CBR2(266)|    1    |  DISABLED |
|   ATMF_CBR3(267)|    1    |  DISABLED |
|    TAG_COS0(512)|    4    |   ENABLED |
|    TAG_COS1(513)|    4    |   ENABLED |
|    TAG_COS2(514)|    4    |   ENABLED |
|    TAG_COS3(515)|    4    |   ENABLED |
|    TAG_COS4(516)|    4    |   ENABLED |
|    TAG_COS5(517)|    4    |   ENABLED |
|    TAG_COS6(518)|    4    |   ENABLED |
|    TAG_COS7(519)|    4    |   ENABLED |
| TAG_COS_ABR(528)|    4    |   ENABLED |
+--------------------------------------+

M8850_LA.4.AXSME.a >
```

The following report appears when you enter the **dspportsct vcThr** command on an AXSM-XG card:

```
M8950_SF.15.AXSMXG.a > dspportsct vcThr 1

Service Class Template [  0] : VC Threshold Parameters
Major Version [  1]          : Minor Version [  0]
+---------------------------------------------------------------------------+
|  SERV TYPE(DEC) | MAX_CELL  |   EFCI   |CLPlo/EPD1|   CLPhi   |   EPD0    |
|                 | THR(cells)|  (cells) | (cells)  |  (cells)  |  (cells)  |
+---------------------------------------------------------------------------+
```

```
| VSI_DEFAULT(  1)|  2260528  |    135631 |     67815 |    169539 |    203447 |
|  VSI_SIGNAL(  2)|     6781  |       406 |       203 |       508 |       610 |
|   ATMF_CBR1(256)|  2260528  |    226052 |    180842 |    180842 |    135631 |
| ATMF_VBRrt1(257)|  2260528  |    226052 |    180842 |    180842 |    135631 |
| ATMF_VBRrt2(258)|  2260528  |    226052 |    180842 |    180842 |    135631 |
| ATMF_VBRrt3(259)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|ATMF_VBRnrt1(260)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|ATMF_VBRnrt2(261)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|ATMF_VBRnrt3(262)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|   ATMF_UBR1(263)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|   ATMF_UBR2(264)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|    ATMF_ABR(265)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|   ATMF_CBR2(266)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|   ATMF_CBR3(267)|  2260528  |    226052 |    180842 |    180842 |    135631 |
|    TAG_COS0(512)|  2260528  |    135631 |     67815 |    158236 |    203447 |

Type <CR> to continue, Q<CR> to stop:
|    TAG_COS1(513)|  2260528  |    135631 |     67815 |    158236 |    203447 |
|    TAG_COS2(514)|  2260528  |    135631 |     67815 |    158236 |    203447 |
|    TAG_COS3(515)|  2260528  |    135631 |     67815 |    169539 |    203447 |
|    TAG_COS4(516)|  2260528  |    135631 |     67815 |    158236 |    203447 |
|    TAG_COS5(517)|  2260528  |    135631 |     67815 |    158236 |    203447 |
|    TAG_COS6(518)|  2260528  |    135631 |     67815 |    158236 |    203447 |
|    TAG_COS7(519)|  2260528  |    135631 |     67815 |    169539 |    203447 |
| TAG_COS_ABR(528)|  2260528  |    135631 |     67815 |    158236 |    203447 |
+--------------------------------------------------------------+
|  SERV TYPE(DEC)  | SCALING | SCALING |PKT DISCARD|VC RED PROB|
|                  |  CLASS  |  CLASS  |   ENABLE  |   CLASS   |
+--------------------------------------------------------------+
| VSI_DEFAULT(  1)|     0    |     0   |  DISABLED |     3     |
|  VSI_SIGNAL(  2)|     0    |     0   |   ENABLED |     4     |
|   ATMF_CBR1(256)|     0    |     0   |  DISABLED |     1     |
| ATMF_VBRrt1(257)|     0    |     0   |  DISABLED |     2     |
| ATMF_VBRrt2(258)|     0    |     0   |  DISABLED |     2     |
| ATMF_VBRrt3(259)|     0    |     0   |  DISABLED |     2     |
|ATMF_VBRnrt1(260)|     0    |     0   |  DISABLED |     2     |
|ATMF_VBRnrt2(261)|     0    |     0   |  DISABLED |     2     |
|ATMF_VBRnrt3(262)|     0    |     0   |  DISABLED |     2     |
|   ATMF_UBR1(263)|     0    |     0   |  DISABLED |     4     |

Type <CR> to continue, Q<CR> to stop:
|   ATMF_UBR2(264)|     0    |     0   |  DISABLED |     4     |
|    ATMF_ABR(265)|     0    |     0   |  DISABLED |     3     |
|   ATMF_CBR2(266)|     0    |     0   |  DISABLED |     1     |
|   ATMF_CBR3(267)|     0    |     0   |  DISABLED |     3     |
|    TAG_COS0(512)|     0    |     0   |   ENABLED |     7     |
|    TAG_COS1(513)|     0    |     0   |   ENABLED |     7     |
|    TAG_COS2(514)|     0    |     0   |   ENABLED |     6     |
|    TAG_COS3(515)|     0    |     0   |   ENABLED |     7     |
|    TAG_COS4(516)|     0    |     0   |   ENABLED |     7     |
|    TAG_COS5(517)|     0    |     0   |   ENABLED |     7     |
|    TAG_COS6(518)|     0    |     0   |   ENABLED |     7     |
|    TAG_COS7(519)|     0    |     0   |   ENABLED |     7     |
| TAG_COS_ABR(528)|     0    |     0   |   ENABLED |     6     |
+--------------------------------------------------------------+

M8950_SF.15.AXSMXG.a >
```

Table 4-6 describes the SCT VC Threshold parameters shown in the example.

Table 4-6 SCT VC Threshold Parameter Descriptions

Label	Range and Units	Description
SERV-TYPE or SERV TYPE (DEC)	—	The service type (for example, CBR, VBR, ABR) to which the parameters (for example, EFCI, CLP_HI, EPD0) in this table apply. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "SERV-TYPE." On the AXSM-XG and AXSM-E cards, this parameter is called "SERV TYPE (DEC)."
MAX_CELL THRESH or MAX_CELL THR (cells)	0–5000000 microseconds	The VcMax threshold for CLP (0+1) cells in microseconds. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "MAX_CELL THRESH." On the AXSM-XG and AXSM-E cards, this parameter is called "MAX_CELL THR (cells)."
EFCI or EFCI (cells)	0–1000000	Explicit Forward Congestion Indication. The VC EFCI discard threshold. This value is a percentage of MAX_CELL THRESH. 1000000 is equal to 100%. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "EFCI." On the AXSM-XG and AXSM-E cards, this parameter is called "EFCI (cells)."
CLP_HI or CLPhi (cells)	0–1000000	Cells Loss Priority - High. The high hysteresis threshold at which CLP (1) cells will be discarded. The cells will continue to be discarded until the CLP_LO threshold is reached. This value is a percentage of MAX_CELL THRESH. 1000000 is equal to 100%. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "CLP_HI." On the AXSM-XG and AXSM-E cards, this parameter is called "CLPhi (cells)."
EPD0 or EPD0 (cells)	0–1000000	Early Packet Discard 0. The maximum threshold for CLP (0+1) cells. This value is a percentage of the MAX_CELL THRESH for the connection. 1000000 is equal to 100%. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "EPD0." On the AXSM-XG cards, this parameter is called "EPD0 (cells)." **Note** This parameter is not available for AXSM-E cards.

Table 4-6 SCT VC Threshold Parameter Descriptions (continued)

Label	Range and Units	Description
CLP_LO/EPD1 or CLPlo/EPD (cells) or CLPlo/EPD1 (cells)	0–1000000	Cells Loss Priority Low / Early Packet Discard 1. The low hysteresis threshold at which CLP (1) cells will stop being discarded. If packet mode is enable, EPD1 executes. **Note** On AXSM/A and AXSM/B cards, this parameter is called "CLP_LO /EPD1." On AXSM-E cards, this parameter is called "CLPlo/EPD (cells)." On AXSM-XG cards, this parameter is called "CLPlo/EPD1 (cells)."
SCALING COSB or SCALING CLASS	1–4	Class of Service Scaling Class. Indicates which of the four Scaling Class Tables (see Table 4-7, 1–4) to use for a connection. Each table is for a specific service category and has an index of 16 entries. Each index entry contains a percentage by which to scale traffic on a connection to reduce CoS buffer congestion. The hardware generates the index and selects the entries as needed. Each entry is the ratio of the COSB cell count to the COSB maximum threshold. CoS scaling occurs when the CoSB cell count is approximately 50% of the CoSB max threshold. **Note** On AXSM/A and AXSM/B cards, this parameter is called "SCALING COSB." On AXSM-E and AXSM-XG cards, this parameter is called "SCALING CLASS."
SCALING Log-If	1–4	Logical Port Scaling Class. Indicates which of the four Scaling Class Tables (see Table 4-8, 1–4) to use on a logical port. Each table is for a specific service category and has an index of 16 entries. Each index entry contains a percentage by which to scale traffic on a connection on a logical port to reduce congestion. The hardware generates the index and selects the entries as needed. Each entry is the ratio of the interface cell count to the interface maximum threshold. Interface scaling occurs when the interface cell count is approximately 50% of the interface max threshold. **Note** This parameter is only available on AXSM/A and AXSM/B cards.

Table 4-6 SCT VC Threshold Parameter Descriptions (continued)

Label	Range and Units	Description
PKT DISCARD ENABLE	ENABLE DISABLE	Enables/disables packet discard mode on the VC. If packet discard mode is enabled, Early Packet Discard (EPD) threshold is activated. If packet discard mode is disabled, the CLP thresholds are activated. **Note** This parameter is only available on AXSM-E and AXSM-XG cards.
VC RED PROB	0–7	Identifies the discard probability lookup table which contains the discard probability values for various degrees of COSB congestion. **Note** This parameter is only available on AXSM-E and AXSM-XG cards.

Table 4-7 Class of Service (CoS) Scaling Table

Index	Scaling Class Table #1 (CBR)	Scaling Class Table #2 (VBR)	Scaling Class Table #3 (ABR)	Scaling Class Table #4 (UBR)
0	100.00%	100.00%	100.00%	100.00%
1	100.00%	100.00%	100.00%	100.00%
2	100.00%	100.00%	100.00%	100.00%
3	100.00%	100.00%	100.00%	100.00%
4	100.00%	100.00%	100.00%	100.00%
5	100.00%	100.00%	100.00%	100.00%
6	100.00%	100.00%	100.00%	67.00%
7	100.00%	100.00%	100.00%	34.00%
8	100.00%	100.00%	50.00%	20.00%
9	100.00%	50.00%	25.00%	12.00%
10	100.00%	25.00%	12.00%	8.00%
11	100.00%	12.00%	6.00%	4.00%
12	100.00%	6.00%	3.00%	2.50%
13	100.00%	3.00%	1.30%	1.40%
14	100.00%	1.30%	0.75%	1.00%
15	100.00%	0.50%	0.50%	0.50%

Table 4-8 Logical Interface Scaling Table

Index	Scaling Class Table #1 (CBR)	Scaling Class Table #2 (VBR)	Scaling Class Table #3 (ABR)	Scaling Class Table #4 (UBR)
0	100.00%	100.00%	100.00%	100.00%
1	100.00%	100.00%	100.00%	100.00%
2	100.00%	100.00%	100.00%	100.00%
3	100.00%	100.00%	100.00%	100.00%
4	100.00%	100.00%	100.00%	100.00%
5	100.00%	100.00%	100.00%	100.00%
6	100.00%	100.00%	100.00%	67.00%
7	100.00%	100.00%	100.00%	34.00%
8	100.00%	100.00%	50.00%	20.00%
9	100.00%	50.00%	25.00%	12.00%
10	100.00%	25.00%	12.00%	8.00%
11	100.00%	12.00%	6.00%	4.00%
12	50.00%	6.00%	3.00%	2.50%
13	25.00%	3.00%	1.30%	1.40%
14	6.00%	1.30%	0.75%	1.00%
15	0.50%	0.50%	0.50%	0.50%

Port SCT COSB Threshold Parameters (cosThr)

The **dspportsct cosThr** command output varies slightly according to type of AXSM card you are working on.

The following report appears when you enter the **dspportsct cosThr** command on an AXSM/A or AXSM/B card:

```
M8850_LA.1.AXSM.a > dspportsct cosThr 1

+-----------------------------------+
| MINOR - VERSION |  MAJOR - VERSION |
| 000000000000000 |  000000000000000 |
+-----------------------------------+

+-----------------------------------------------------------------------------------+
Service Class Template [00000] : COSB Threshold Parameters
+-----------------------------------------------------------------------------------+
| COSB | MAX_CELL  |  EFCI   | CLP_HI  |  EPD0   | CLP_LO  |   RED   |
|      | THRESH   |         |         |         | EPD1   |         |
+--------------------------------------------------------------------------------+
| 0001 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0002 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0003 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0004 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0005 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0006 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0007 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0008 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0009 |        0   | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
```

```
| 0010 |        0    | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0011 |        0    | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0012 |        0    | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0013 |        0    | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0014 |        0    | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
| 0015 |        0    | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |

Type <CR> to continue, Q<CR> to stop:
| 0016 |        0    | 0000000 | 0000000 | 0000000 | 0000000 | 0000000 |
+------------------------------------------------------------------------------------------
----+

M8850_LA.1.AXSM.a >
```

The following report appears when you enter the **dspportsct cosThr** command on an AXSM-E card:

```
M8850_LA.12.AXSME.a > dspportsct cosThr 1
+--------------------------------------------------------------+
| Service Class Template [  0] : COSB Threshold Parameters |
| Major Version [  1]          : Minor Version [  0]       |
+--------------------------------------------------------------+
|COSB| MAX_THR  |   EFCI   | CLPlo/EPD1|  CLPhi   |    EPD0  | DISC_ALM  |
|    | (cells)  |  (cells) |  (cells)  |  (cells) |  (cells) |THR(cells) |
+--------------------------------------------------------------+
|  1 |      718 |      718 |      574  |      574 |      430 |       15  |
|  2 |     1436 |      287 |     1148  |     1148 |      861 |       15  |
|  3 |     4310 |      258 |     4094  |     4310 |     4094 |       15  |
|  4 |       71 |       71 |       56  |       56 |       42 |       15  |
|  5 |      143 |      143 |      114  |      114 |       85 |       15  |
|  6 |      718 |      718 |      574  |      574 |      430 |       15  |
|  7 |     1436 |     1436 |     1148  |     1148 |      861 |       15  |
|  8 |     4310 |     4310 |     4094  |     4310 |     4094 |       15  |
|  9 |     4310 |     4310 |     4094  |     4310 |     4094 |       15  |
| 10 |     4310 |     4310 |     4094  |     4310 |     4094 |       15  |
| 11 |     1436 |     1436 |     1148  |     1148 |      861 |       15  |
| 12 |      143 |      143 |      114  |      114 |       85 |       15  |
| 13 |      718 |      718 |      574  |      574 |      430 |       15  |
| 14 |     1436 |     1436 |     1148  |     1148 |      861 |      150  |
| 15 |     1436 |     1436 |     1148  |     1148 |      861 |      150  |

Type <CR> to continue, Q<CR> to stop:
| 16 |      459 |       22 |      321  |      367 |      367 |  1000000  |
+--------------------------------------------------------------+

M8850_LA.12.AXSME.a >
```

The following report appears when you enter the **dspportsct cosThr** command on an AXSM-XG card:

```
M8950_SF.15.AXSMXG.a > dspportsct cosThr 1
+--------------------------------------------------------------+
| Service Class Template [  0] : COSB Threshold Parameters   |
| Major Version [  1]          : Minor Version [  0]         |
+--------------------------------------------------------------+
|COSB| MAX_THR  |   EFCI   | CLPlo/EPD1|  CLPhi   |    EPD0  |
|    | (cells)  |  (cells) |  (cells)  |  (cells) |  (cells) |
+--------------------------------------------------------------+
|  1 |    22605 |    11302 |    15823  |    18084 |    18084 |
|  2 |    22605 |     1130 |    15823  |    18084 |    18084 |
|  3 |    22605 |     1130 |    15823  |    18084 |    18084 |
|  4 |   452105 |    22605 |   316473  |   361684 |   361684 |
|  5 |   452105 |    22605 |   316473  |   361684 |   361684 |
|  6 |   452105 |   452105 |   429499  |   452105 |   429499 |
|  7 |   452105 |   452105 |   429499  |   452105 |   429499 |
```

```
|  8 |   452105 |   452105 |   429499  |   452105 |   429499 |
|  9 |   452105 |   452105 |   429499  |   452105 |   429499 |
| 10 |   452105 |    27126 |   429499  |   452105 |   429499 |
| 11 |    22605 |    22605 |    18084  |    18084 |    13563 |
| 12 |    45210 |    45210 |    36168  |    36168 |    27126 |
| 13 |   226052 |   226052 |   180841  |   180841 |   135631 |
| 14 |   452105 |   452105 |   361684  |   361684 |   271263 |
| 15 |   452105 |   452105 |   361684  |   361684 |   271263 |

Type <CR> to continue, Q<CR> to stop:
| 16 |   452105 |    22605 |   316473  |   361684 |   361684 |
+-------------------------------------------------------------+
+-----------------------------------------------------------+
| Service Class Template [ 5] : COSB Threshold Parameters   |
+-----------------------------------------------------------+
|COSB| MAX_CELL | REDHI_01 | REDHI_1  | REDLO_01 | REDLO_1  |
|    |THR(Cells)|(in Cells)|(in Cells)|(in Cells)|(in Cells)|
+-----------------------------------------------------------+
|  1 |    22605 |    16953 |    15823 |    14693 |    12432 |
|  2 |    22605 |    16953 |    15823 |    14693 |    12432 |
|  3 |    22605 |    16953 |    15823 |    14693 |    12432 |
|  4 |   452105 |   339078 |   316473 |   293868 |   248657 |
|  5 |   452105 |   339078 |   316473 |   293868 |   248657 |
|  6 |   452105 |   339078 |   316473 |   293868 |   248657 |
|  7 |   452105 |   339078 |   316473 |   293868 |   248657 |
|  8 |   452105 |   339078 |   316473 |   293868 |   248657 |
|  9 |   452105 |   339078 |   316473 |   293868 |   248657 |
| 10 |   452105 |   339078 |   316473 |   293868 |   248657 |
| 11 |    22605 |        0 |        0 |        0 |        0 |
| 12 |    45210 |    33907 |    31647 |    29386 |    24865 |
| 13 |   226052 |   169539 |   158236 |   146933 |   124328 |
| 14 |   452105 |   339078 |   316473 |   293868 |   248657 |

Type <CR> to continue, Q<CR> to stop:
| 15 |   452105 |   339078 |   316473 |   293868 |   248657 |
| 16 |   452105 |   339078 |   316473 |   293868 |   248657 |
+-----------------------------------------------------------+
```

Table 4-9 describes the SCT COSB parameters shown in the example.

Table 4-9 SCT COSB Threshold Parameter Descriptions

Label	Range and Units	Description
COSB	—	The service type (for example, CBR, VBR, ABR) to which the parameters (for example, EFCI, CLP_HI, EPD0) in this table apply.
MAX_THR (cells) or MAX_CELL THRESH	0–5000000 microseconds	The maximum threshold, in microseconds, beyond which all CLP (0+1) cells must be dropped. **Note** On the AXSM/A and AXSM/B cards, this parameter is called “MAX_CELL THRESH.” On the AXSM-XG and AXSM-E cards, this parameter is called “MAX_THR (cells).”

Table 4-9 SCT COSB Threshold Parameter Descriptions (continued)

Label	Range and Units	Description
EFCI or EFCI (cells)	0–1000000	Explicit Forward Congestion Indication. The threshold level for congestion indication for ABR traffic using CI control. This threshold is a percentage of the MAX_CELL THRESH for the connection. 1000000 is equal to 100%. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "EFCI." On the AXSM-XG and AXSM-E cards, this parameter is called "EFCI (cells)."
CLP_HI or CLPhi (cells)	0–1000000	Cells Loss Priority High. The maximum number of cells that can be queued in the buffer. CLP (1) cells that exceed this threshold are discarded. This threshold is a percentage of the MAX_CELL THRESH for the connection. 1000000 is equal to 100%. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "CLP_HI." On the AXSM-XG and AXSM-E cards, this parameter is called "CLPhi (cells)."
EPD0 or EPD0 (cells)	0–1000000	Early Packet Discard 0. The maximum number of cells that can be queued in the buffer in packet mode. Any CLP (0+1) cells that exceed this threshold, will be discarded. This threshold is a percentage of the MAX_CELL THRESH for the connection. 1000000 is equal to 100%. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "EPD0." On the AXSM-XG and AXSM-E cards, this parameter is called "EPD0 (cells)."
CLP_LO/EPD1 or CLPlo/EPD1 (cells)	0–1000000	Cell Loss Priority Low/ Early Packet Discard 1. The threshold at which CLP (0+1) cells that exceed this threshold are discarded. This threshold is a percentage of the MAX_CELL THRESH for the connection. 1000000 is equal to 100%. **Note** On the AXSM/A and AXSM/B cards, this parameter is called "CLP_LO/EPD1." On the AXSM-XG and AXSM-E cards, this parameter is called "CLPlo/EPD1 (cells)."

Table 4-9 SCT COSB Threshold Parameter Descriptions (continued)

Label	Range and Units	Description
RED	0–1000000	Random Early Discard. The threshold at which the COSB Random Early Discard is activated. This threshold is a percentage of the MAX_CELL THRESH for the connection. 1000000 is equal to 100%. **Note** This parameter is available on AXSM/A and AXSM/B cards only.
REDHI_01 (in cells)	0–1000000	If RED is enabled on the COSB, all of the AAL5 frames with CLP0 frames, and their associated frames, are discarded when the time averaged cell count exceeds this threshold. This threshold is a percentage of the MAX_CELL THRESH for the connection. 1000000 is equal to 100%. **Note** This parameter is available on AXSM-XG cards only.
REDHI_1 (in cells)	0–1000000	If RED is enabled on the COSB, all of the AAL5 frames with CLP1 frames, and their associated frames, are discarded when the time averaged cell count exceeds this threshold. This threshold is a percentage of the MAX_CELL THRESH for the connection. 1000000 is equal to 100%. **Note** This parameter is available on AXSM-XG cards only.
REDLO_01 (in cells)	0–1000000	If RED is enabled on the COSB, there is a non-zero probability of discarding an SOF cell with CLP0 and its associated frames, when the time averaged cell count on the COSB exceeds this threshold. **Note** This parameter is available on AXSM-XG cards only.
REDLO_1 (in cells)	0–1000000	If RED is enabled on the COSB, there is a non-zero probability of discarding an SOF cell with CLP1 and its associated frames, when the time averaged cell count on the COSB exceeds this threshold. **Note** This parameter is available on AXSM-XG cards only.

Table 4-9 SCT COSB Threshold Parameter Descriptions (continued)

Label	Range and Units	Description
DISC_ALM THR (cells)	0–1000000	If the number of cells discarded in a COSB exceeds the DISC_ALM threshold, a software alarm is generated. **Note** This alarm will be generated only is the discard alarm features is enabled on the card. **Note** This parameter is available on AXSM-E cards only.

Port SCT ABR Parameters (abr)

The following report appears when you enter the **dspportsct abr** command on an AXSME or AXSMXG card:

```
M8850_LA.12.AXSME.a > dspportsct abr 1

Service Class Template [  0] : VC ABR Parameters
Major Version [  1]          : Minor Version [  0]
+-----------------------------------------------+
|    SERV TYPE    | CI CTRL |  VSVD   |
+-----------------------------------------------+
| VSI_DEFAULT(  1)| ENABLED | DISABLED|
|  VSI_SIGNAL(  2)| ENABLED | DISABLED|
|   ATMF_CBR1(256)|DISABLED | DISABLED|
| ATMF_VBRrt1(257)|DISABLED | DISABLED|
| ATMF_VBRrt2(258)|DISABLED | DISABLED|
| ATMF_VBRrt3(259)|DISABLED | DISABLED|
|ATMF_VBRnrt1(260)|DISABLED | DISABLED|
|ATMF_VBRnrt2(261)|DISABLED | DISABLED|
|ATMF_VBRnrt3(262)|DISABLED | DISABLED|
|   ATMF_UBR1(263)|DISABLED | DISABLED|
|   ATMF_UBR2(264)|DISABLED | DISABLED|
|    ATMF_ABR(265)| ENABLED | DISABLED|
|   ATMF_CBR2(266)|DISABLED | DISABLED|
|   ATMF_CBR3(267)|DISABLED | DISABLED|
|    TAG_COS0(512)|DISABLED | DISABLED|
|    TAG_COS1(513)|DISABLED | DISABLED|

Type <CR> to continue, Q<CR> to stop:
|    TAG_COS2(514)|DISABLED | DISABLED|
|    TAG_COS3(515)|DISABLED | DISABLED|
|    TAG_COS4(516)|DISABLED | DISABLED|
|    TAG_COS5(517)|DISABLED | DISABLED|
|    TAG_COS6(518)|DISABLED | DISABLED|
|    TAG_COS7(519)|DISABLED | DISABLED|
| TAG_COS_ABR(528)|DISABLED | DISABLED|
+-----------------------------------------------+
```

Table 4-10 SCT General Parameter Descriptions

Parameter	Range	Description
SERV-TYPE		The service type (for example, CBR, VBR, ABR) to which the parameters in this table apply (for example, COSB_NUM, CAC_TYPE, UPC_ENB).
CI-CNTRL	Enabled Disabled	Indicates whether Congestion Indication Control is enabled or disabled.
VSVD	Enabled Disabled	Indicates whether the EFCI Threshold is enabled or disabled.

Managing Lines

Chapter 2, "Preparing AXSM Lines for Communication,"describes how to bring up (add) and modify AXSM card lines. The following sections provide procedures for doing the following:

- Displaying a List of Lines
- Displaying the Configuration for a Single Line
- Bringing Down a Line

Displaying a List of Lines

To display a list of lines on an AXSM card, enter the **dsplns** command as follows:

```
M8850_LA.3.AXSM.a > dsplns
  Line  Line      Line        Line     Length  OOF      AIS        Alarm
  Num   State     Type        Lpbk    (meters) Criteria cBitsCheck State
  ---- ------- ----------- ----------- ------   -------- ---------- -----
   1.1    Up  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.2  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.3  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.4  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.5  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.6  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.7  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.8  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.1  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.2  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.3  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.4  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.5  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.6  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.7  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.8  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear

M8850_LA.3.AXSM.a >
```

Note The line number is found in the Line column in the format *bay.line*.

Displaying the Configuration for a Single Line

To display the configuration of a single line on an AXSM card, enter the **dspln** command in the following format:

dspln <-ds3|-e3|-sonet|-e1> <*bay.line*>

Replace <*bay.line*> with the number of the line you want to display.

Note To display a list of all line numbers on the card, enter the **dsplns** command.

In the following example, the user displays the configuration for the T3 (DS3) line 1.1:

```
M8850_LA.3.AXSM.a > dspln -ds3 1.1
  Line Number         : 1.1
  Admin Status        : Up                Alarm Status        : Clear
  Line Type           : ds3cbitadm        Number of ports     : 1
  Line Coding         : ds3B3ZS           Number of partitions: 0
  Line Length(meters) : 0                 Number of SPVC      : 0
  OOFCriteria         : 3Of8Bits          Number of SPVP      : 0
  AIS c-Bits Check    : Check             Number of SVC       : 0
  Loopback            : NoLoop
  Xmt. Clock source   : localTiming
  Rcv FEAC Validation : 4 out of 5 FEAC codes
  Xmt. Trace (E3 only):

M8850_LA.3.AXSM.a >
```

Bringing Down a Line

When a line is not working properly, it generates a line alarm. If you want to suppress the alarm and you do not have time to correct the problem, you can bring down the line. Bringing down the line takes it out of service, so no alarms are generated.

Tip You can reduce the level of an alarm on a failed line from major to minor by using the **addlnloop** command to place the line in local loopback mode. This does not completely eliminate the alarm, but it does reduce the severity and allow you to preserve the configured resources for that line.

To bring down a line, use the following procedure.

Step 1 Delete all connections that are associated with the line and paths ((**dspcons** and **delcon** commands).

Tip Connections are associated with ports (**dspcons**), and ports are associated with lines (**dspports**). To determine which connections use a line, first determine which ports are configured for that line.

Step 2 Delete all partitions that are associated with the port (**delpart** command).

Step 3 Delete all ports that are associated with the line (**delport** command).

Step 4 Delete any paths that are associated with the line (**dnpath** command), and unchannelize the line you want to delete.

Tip When a port is deleted, the resource partition associated with that port is also deleted at the same time. Therefore, it is not necessary to delete the port resource partition prior to deleting the port.

Step 5 Enter the **dnln** <*bay.line*> command to deactivate a line. Replace <*bay.line*> with the number of the line you want to display.

Note You can view the available line numbers in the **dsplns** display.

In the following example, the user deactivates line 1.2:

```
M8850_LA.3.AXSM.a > dnln 1.2

M8850_LA.3.AXSM.a >
```

Step 6 Enter the **dsplns** command to verify that the line is in the "Down" in the *Line State* column.

Managing Ports

Chapter 2, "Preparing AXSM Lines for Communication," describes how to add logical ports to the lines on AXSM cards. The sections that follow provide procedures for doing the following:

- Displaying a List of Ports
- Displaying the Status of a Single Port
- Modifying an ATM Port Configuration
- Deleting Ports
- Deleting Ports
- Managing Resource Partitions

Displaying a List of Ports

To display a list of all ports on the AXSM card, enter the **dspports** command.

In the following example, the user displays all ports on the current AXSM card:

```
M8850_LA.3.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt        (VNNI, (EVNNI,EVUNI)
                                            used)          VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
    1  1.1    Up    Up      10000     10000   0        NNI      0      0      0
    2  1.2    Up    Up        100       100   0        UNI      0      0      0
    3  1.3    Up  Down        100       100   0        UNI      0      0      0
    4  1.4    Up  Down        100       100   0        UNI      0      0      0
    5  1.5    Up  Down        100       100   0        UNI      0      0      0

M8850_LA.3.AXSM.a >
```

Displaying the Status of a Single Port

To display configuration information for a single port on an AXSM card, enter the **dspport** <*ifnum*> command. Replace <*ifnum*> with the port or path identifier

In the following example, the user displays the status for the ATM port 1.

```
M8850_LA.3.AXSM.a > dspport 1
Interface Number              : 1
  Line Number                   : 1.1
  Admin State                   : Up        Operational State     : Up
  Guaranteed bandwidth(cells/sec): 10000     Number of partitions  : 0
  Maximum bandwidth(cells/sec)   : 10000     Number of SPVC        : 0
  ifType                        : NNI       Number of SPVP        : 0
  VPI number (VNNI, VUNI)       : 0         Number of SVC         : 0
  MIN VPI (EVNNI, EVUNI)        : 0         MAX VPI (EVNNI, EVUNI): 0
  SCT Id                        : 0
  F4 to F5 Conversion           : Disabled

M8850_LA.3.AXSM.a >
```

Modifying an ATM Port Configuration

Use the following procedure to modify an ATM port's configuration:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **dspports** command as follows to display all ATM ports on the current AXSM, and to obtain the *ifnum* of the port you want to modify.

Note The interface number for each port appears in the *ifNum* column.

Step 3 If you want to modify one of the following service affecting parameters, enter the **dnport** <*ifNum*> command to bring down the port you want to modify:

- Port SCT ID
- Minimum VPI
- Maximum VPI

If you want to modify non-service affecting port parameters, such as the guaranteed port rate or the maximum port rate skip this step and proceed with Step 4.

In the following example, the user brings down the ATM port 5:

```
M8850_LA.3.AXSM.a > dnport 5
dnport/dnallports can disrupt traffic on existing connections.
Use this command only to modify partition parameters or change SCT
Do you want to proceed (Yes/No) ? y

M8850_LA.3.AXSM.a >
```

Step 4 Enter the **cnfport** command as follows to modify port parameters:

```
cnfport <ifNum> [-min <guaranteedRate>] [-max <maxRate>] [-sct <sctID>] [-minvpi <minvpi>]
[-maxvpi <maxvpi>]
```

Table 4-11 describes the parameters for the **cnfport** command.

Table 4-11 Parameters for the cnfport Command

Parameter	Description
<*ifNum*>	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-min	Guaranteed rate on a port in cells per second. For all interface types (UNI, NNI, VNNI, EVNNI, and EVUNI), *guaranteedRate* must be the same as *maxrate*. The total guaranteed rates cannot exceed the highest value in the following ranges: • OC3—50 through 353207 cps • STS1—50 through 114113 cps • DS3—between 50 and 96000(PLCP) or 104268(ADM) • E3—50 and 80000 • E1—between 50 and 4528 cps • DS 1—between 50 and 3622 cps • T1 based IMA group—multiple of 50 not greater than N * (3622 * (M-1)/M * 2048/2049) • E1 based IMA group— multiple of 50 not greater than N * (4528 * (M-1)/M * 2048/2049), where N = number of IMA links in the IMA group, and M = IMA group frame length **Note** The bandwidth rate must always be multiple of 50, or equal to the maximum physical line or path rate. **Note** On the AXSM card, the guaranteed rate and max rate settings must be the same.

Table 4-11 Parameters for the cnfport Command (continued)

-max	Maximum rate on a logical port in cells/second. For all interface types (UNI, NNI, VNNI, EVNNI, and EVUNI), *guaranteedRate* must be the same as *maxrate*. The total maximum rates cannot exceed the highest value in the following ranges: • OC3—50 through 353207 cps • STS1—50 through 114113 cps • DS3—between 50 and 96000(PLCP) or 104268(ADM) • E3—50 and 80000 • E1—between 50 and 4528 cps • DS 1—between 50 and 3622 cps • T1 based IMA group—multiple of 50 not greater than N * (3622 * (M-1)/M * 2048/2049) • E1 based IMA group— multiple of 50 not greater than N * (4528 * (M-1)/M * 2048/2049), where N = number of IMA links in the IMA group, and M = IMA group frame length **Note** The bandwidth rate must always be multiple of 50, or equal to the maximum physical line or path rate. **Note** On the AXSM card, the guaranteed rate and max rate settings must be the same.
-sct	Specifies the number of a service class template (SCT) for the port. The range is 0–255. Cisco provides SCT numbers 2, 3, 4, and 5. You can modify one of these SCTs through the Cisco WAN Manager application and assign a number in the range 6–255 to the new SCT. Subsequently, you can assign the new SCT to the port with the *sctID* parameter in **cnfport**. To see the ID of the current SCT for this port, use **dspport**. To see the parameters within the current SCT, use the **dspportsct** command. **Note** The default setting for **-sct** is *0*. **Note** Modification of this parameter is service affecting, and requires you to bring down the port (**dnport**) before you make any changes.

Table 4-11 Parameters for the cnfport Command (continued)

-minvpi	Specifies the minimum VPI. • NNI range: 0 and 4095 • UNI range: 0 and 255 • EVNNI range: 0 and 4095 • EVUNI range: 0 and 255 **Note** Modification of this parameter is service affecting, and requires you to bring down the port (**dnport**) before you make any changes.
-maxvpi	Specifies the maximum VPI. • NNI range: 0 and 4095 • UNI range: 0 and 255 • EVNNI range: 0 and 4095 • EVUNI range: 0 and 255 **Note** Modification of this parameter is service affecting, and requires you to bring down the port (**dnport**) before you make any changes.

Step 5 If you brought a port down in Step 3 with the **dnport** command, enter the **upport** <*ifNum*> command as follows to re-activate that port. Replace <*ifNum*> with the interface number of the port you want to activate.

```
M8850_LA.3.AXSM.a > upport 5

M8850_LA.3.AXSM.a >
```

If you did not bring down a port in Step 4, skip this step and proceed to Step 6.

Step 6 Enter the **dspport** <*ifNum*> command to verify the configuration of the port you modified in Step 4. Replace <*ifNum*> with the interface number of the port you modified.

Deleting Ports

Use the **delport** command to delete ports from an AXSM card.

Before you can delete a port, verify the following:

- there are no active connections associated with the port you want to delete.
- signaling must be disabled on the port. Enter the **dsppnportsig** command on the PXM to see whether signaling is disabled or enabled on the port.

Use the sections that follow do the following tasks:

- Delete an ATM Port
- Managing Resource Partitions

Delete an ATM Port

To delete an ATM port on an AXSM card, use the following procedure.

Note If you want to delete a PNNI signaling port from the AXSM, you must disable signaling on the PXM card before you can delete the port on the AXSM.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **dspports** command as follows to display all ATM ports on the current AXSM, and to obtain the *ifnum* of the port you want to delete.

```
M8850_LA.3.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt        (VNNI, (EVNNI,EVUNI)
                                            used)          VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
    1  1.1    Up    Up      10000     10000   0       NNI      0      0      0
    2  1.2    Up    Up        100       100   0       UNI      0      0      0
    3  1.3    Up  Down        100       100   0       UNI      0      0      0
    4  1.4    Up  Down        100       100   0       UNI      0      0      0
    5  1.5    Up  Down        100       100   0       UNI      0      0      0

M8850_LA.3.AXSM.a >
```

Note The interface number for each port appears in the *ifNum* column.

Step 3 Enter the **dspcons** to verify that there are no connections associated with the port you want to delete. If there are no connections associated with the port you want to delete, proceed to Step 4.

If there are connections associated with the port you want to delete, enter the **delcon** command as follows to delete them:

delcon *<ifNum> <vpi> <vci>*

Replace the *<ifNum> <vpi> <vci>* parameters with the interface number, VPI, and VCI of the port you want to delete.

Note You can obtain the *vpi* and *vci* for a specific port (*ifNum)* from the *Identifier* column in the **dspcons** command display.

In the following example, the user displays all connections on the current AXSM, and deletes the connection on port 1 that has a VPI of 100 and a VCI of 100.

```
M8850_LA.3.AXSM.a > dspcons
record    Identifier    Type   SrvcType   M/S    Upld    Admn   Alarm
------    ----------    ----   --------   ---    ----    ----   -----
    0  01 0100 00100    VCC        cbr1   S   00000001     UP  none
    1  02 0101 00101    VCC        cbr1   S   00000002     UP  none
    2  03 0105 00105    VCC        cbr1   M   00000003     UP  none

M8850_LA.3.AXSM.a > delcon 1 100 100
Deletion successful

M8850_LA.3.AXSM.a >
```

Step 4 Enter the **dspparts** to verify that there are no partitions associated with the port you want to delete. If there are no partitions associated with the port you want to delete, proceed to Step 5.

If there are partitions associated with the port you want to delete, enter the **delpart** command as follows to delete them:

delpart <*ifNum*> <*partid*>

Replace the <*ifNum*> parameter with the interface number of the port whose partition you want to delete. Replace the <*partid*> parameter with number of the partition you want to delete.

In the following example, the user displays all partitions on the current AXSM, and deletes partition 1 on port 1.

```
M8850_LA.3.AXSM.a > dspparts
if  part Ctlr egr      egr      ingr     ingr     min max   min    max  min   max
Num ID   ID   GuarBw  MaxBw   GuarBw  MaxBw   vpi vpi   vci    vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
----------------------------------------------------------------------------
 1   1    2  500000  500000  500000  500000   10 4095    10 65535      1    100
 2   1    2  500000  500000  500000  500000   10  200    10 65535      1    100
 3   1    2  500000  500000  500000  500000   10  200    10 65535      1    100

M8850_LA.3.AXSM.a > delpart 1 1

M8850_LA.3.AXSM.a >
```

Step 5 Enter the **delport** <*ifNum*> command to delete a specific port. replace <*ifNum*> with the interface number for the port you want to delete.

Note Enter the **dspports** command to see the interface numbers for all ATM ports on the current AXSM.

In the following example, the user deletes port 1 from the current AXSM:

```
M8850_LA.3.AXSM.a > delport 1

M8850_LA.3.AXSM.a >
```

Step 6 Enter the **dspports** command to verify that the appropriate port has been deleted.

Managing Resource Partitions

The"Partitioning Port Resources between Controllers" section in Chapter 3, "Provisioning ATM Services," describes how to partition port resources on AXSM cards. Resource partitions define how a switch's limited resources are distributed between two or more virtual switch controllers. By defining the limits of the resources available to each controller, competition and overlap is eliminated for these resources.

You can view the port resource partition configuration, make changes to it, or delete it. If you delete a port resource partition, you will have to add a new partition for that port before you can assign connections to the port.

The following tasks describe how to manage port resource partitions on the AXSM:

- Displaying an ATM Port Resource Partition Configuration
- Changing the Configuration of an ATM Port Resource Partition
- Deleting an ATM Port Resource Partition

Displaying an ATM Port Resource Partition Configuration

Use the following procedure to display a list of the resource partitions configured on an AXSM card, or to display configuration information for a particular resource partition for the card.

Step 1 Establish a CLI management session at any level of user access.

Step 2 Enter the **dspparts** command to display information for all ATM port resource partitions configured on the current AXSM, as shown in the following example.

```
M8850_LA.3.AXSM.a > dspparts
if  part Ctlr egr     egr     ingr    ingr    min max   min   max  min   max
Num ID   ID   GuarBw  MaxBw   GuarBw  MaxBw   vpi vpi   vci   vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
----------------------------------------------------------------------------
 1   1    2  500000  500000  500000  500000   10 4095    10 65535      1    100
 2   1    2  500000  500000  500000  500000   10  200    10 65535      1    100
 3   1    2  500000  500000  500000  500000   10  200    10 65535      1    100
```

Step 3 To display configuration information for a particular resource partition on the current AXSM, obtain the *ifNum* and the *partID* of the resource partition you want to display, and enter the **dsppart** command as follows:

```
M8850_LA.3.AXSM.a > dsppart 1 1
  Interface Number              : 1
  Partition Id                  : 1        Number of SPVC: 0
  Controller Id                 : 2        Number of SPVP: 0
  egr Guaranteed bw(.0001percent): 500000   Number of SVC : 0
  egr Maximum bw(.0001percent)   : 500000
  ing Guaranteed bw(.0001percent): 500000
  ing Maximum bw(.0001percent)   : 500000
  min vpi                       : 11
  max vpi                       : 200
  min vci                       : 10
  max vci                       : 65535
  guaranteed connections        : 1
  maximum connections           : 100

M8850_LA.3.AXSM.a >
```

Replace the *ifNum* argument with the interface number of the selected port; replace the *partID* argument with the partition ID for the selected port.

The following example shows typical output from a **dsppart** command that specifies the ATM port number **5** and partition ID number **1**.

Changing the Configuration of an ATM Port Resource Partition

To change the configuration of a particular ATM port resource partition, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **dspparts** command to obtain the partition ID for the port partition you want to configure. The port number appears in the *if Num* column, and the partition ID appears in the *part ID* column.

Step 3 Enter the **cnfpart** command as follows to modify the configuration of a particular ATM port resource partition.

cnfpart -if <*if*> **-id** <*partionID*> **-emin** <*egrMinBw*> **-emax** <*egrMaxBw*> **-imin** <*ingMinBw*> **-imax** <*ingMaxBw*> **-vpmin** <*minVpi*> **-vpmax** <*maxVpi*> **-vcmin** <*minVci*> **-vcmax** <*maxVci*> **-mincon** <*min connections*> **-maxcon** <*max connections*>

Table 4-12 describes the arguments of the **cnfpart** command.

Table 4-12 Keywords and Arguments for the cnfpart Command

Argument	Description
-if <*ifNum*>	Identifies the logical ATM interface to which you want to add a resource partition. Enter the **-if** keyword followed by the interface (or port) number, for example: `-if 10` **Note** enter the **dspports** command to see all
-id <*ctlrNum*>	Defines the controller identification number. The ranges are as follows: • AXSM: 1–5 • AXSM-E and AXSM-XG: 1–20 Enter the **-id** keyword followed by the controller number, for example: `-id 2` For information about adding the a controller, refer to the document entitled *MGX 8850, 8950, and 8830 Software Configuration Guide (PXM45, PXM45/B, and PXM1E), Release 3*.
-emin <*egrMinBw*>	Specifies the guaranteed percentage of egress bandwidth. Each unit of *egrMinBw* is 0.00001 of the total bandwidth on the port. (An *egrMinBw* of 1000000 = 100%.) This approach provides a high level of granularity. Enter the **-emin** keyword followed by the guaranteed percentage of egress bandwidth, for example: `-emin 10000`
-emax <*egrMaxBw*>	Specifies the maximum percentage of the egress bandwidth. Each unit of *egrMaxBw* is 0.00001 of the total bandwidth available to the port. (An *egrMaxBw* of 1000000 = 100%.) The resulting bandwidth must be at least 50 cps. Enter the **-emax** keyword followed by the maximum percentage of the egress bandwidth, for example: `-emax 100000`

Table 4-12 Keywords and Arguments for the cnfpart Command (continued)

Argument	Description
-imin *<ingMinBw>*	Specifies the guaranteed percentage of the ingress bandwidth. Each unit of *ingMinBw* is 0.0001 of the total bandwidth available to the port. For example, an *ingMinBw* of 1000000 = 100%. Enter the **-imin** keyword followed by the minimum percentage of ingress bandwidth, for example: `-imin 10000`
-imax *<ingMaxBw>*	Specifies the maximum percentage of the ingress bandwidth. Each increment of *ingMaxBw* is 0.0001 of the total bandwidth on the port. For example, an *ingMaxBw* of 1000000 = 100%. Note that the maximum ingress bandwidth must be at least 50 cps. Enter the **-imax** keyword followed by the maximum percentage of the ingress bandwidth, for example: `-imax 100000`
-vpmin *<minVpi>*	Specifies the minimum VPI. For NNI, the range is 0–4095. For UNI, the range is 0–255. Enter the **-vpmin** keyword followed by the minimum VPI, for example: `-vpmin 100`
-vpmax *<maxVpi>*	Specifies the maximum VPI in the range 0–4095 for an NNI. For a UNI, the range is 0–255. The *maxvpi* cannot be less than the *minvpi.* Enter the **-vpmax** keyword followed by the maximum VPI, for example: `-vpmax 200`
-vcmin *<minVci>*	Minimum VCI range. Enter a number in the range from 1 through 65535. Enter the **-vcmin** keyword followed by the minimum VCI, for example: `-vcmin 100`
-vcmax *<maxVci>*	Maximum VCI range. Enter a number in the range from 1 through 65535. The *vcmax* cannot be less than the *vcmin.* Enter the **-vcmax** keyword followed by the maximum VCI, for example: `-vcmax 60000`
-mincon *<min connections>*	Specifies the guaranteed number of connections. The range is between 0 and the maximum number of connections in the port group. Enter the **-mincon** keyword followed by the interface (or port) number, for example: `-mincon 0` **Note** Enter the **dspcd** command for information about port groups.
-maxcon *<max connections>*	Specifies the maximum number of connections. The range is between 10 and the maximum number of connections in the port group. Enter the **-maxcon** keyword followed by the interface (or port) number, for example: `-maxcon 120000` **Note** Enter the **dspcd** command for information about port groups.

Step 4 Enter the **dsppart** command to display and verify the modified resource partition configuration.

Deleting an ATM Port Resource Partition

To delete an ATM port resource partition, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **dspparts** command as shown in the following example to display a list of the partitions for the AXSM. Note the interface number and controller number for the resource partition you wish to delete.

```
M8850_LA.3.AXSM.a > dspparts
if  part Ctlr egr     egr     ingr    ingr    min max   min   max  min   max
Num ID   ID   GuarBw  MaxBw   GuarBw  MaxBw   vpi vpi   vci   vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
----------------------------------------------------------------------------
 1   1    2  500000  500000  500000  500000   11  200    10 65535      1    100
 2   1    2  500000  500000  500000  500000   10  200    10 65535      1    100
 3   1    2  500000  500000  500000  500000   10  200    10 65535      1    100

M8850_LA.3.AXSM.a >
```

Step 3 Enter the **dspcons** command as shown in the following example to display a list of all active connections on the current AXSM. Determine if the interface to which the partition is assigned is being used by a connection.

```
M8850_LA.3.AXSM.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld     Admn   Alarm
------    ----------   ----   --------   ---    ----     ----   -----
    1  02 0101 00101   VCC        cbr1   S   00000002     UP      none
    2  03 0105 00105   VCC        cbr1   M   00000003     UP      none

M8850_LA.3.AXSM.a >
```

Note The *Identifier* column identifies the interface numbers, the VPI, and VCI for each connection. If the interface is in use, note the interface number, the VPI, and the VCI values of all connections using the interface, because you will need these values to delete the connections.

Step 4 Enter the **delcon** command as follows to delete any ATM connection that uses the interface whose partition you want to delete. If the are no connection that use the interface whose partitions you want to delete, skip this step and proceed with Step 5.

delcon <*ifNum*> <*vpi*> <*vci*>

Replace <*ifNum* > with the interface number of the port associated with the connection you want to delete. Replace <*vpi*> with the VPI of the connection you want to delete. Replace <*VCI*> with the VCI of the connection you want to delete.

Note You must enter the **delcon** command once for each connection that uses the interface whose partition you want to delete.

In the following example, the user deletes the connection on port 2with a VPI of 101 and a VCI of 101.

```
M8850_LA.3.AXSM.a > delcon 2 101 101
Deletion successful

M8850_LA.3.AXSM.a >
```

Step 5 Enter the **delpart** command as follows to delete the resource partition.

delpart <*if_num*> <*part_id*>

Replace <*ifNum* > with the interface number of the port associated with the connection you want to delete. Replace <*partID*> with the identifier of the partition you want to delete.

In the following example, the user deletes partition 1 from port 1:

```
M8850_LA.3.AXSM.a > delpart 1 1

M8850_LA.3.AXSM.a >
```

Step 6 Enter the **dspparts** command to verify that the appropriate partition has been deleted.

Managing Connections

Chapter 3, "Provisioning ATM Services," describes how to add connections to AXSM cards. The following sections provide procedures for doing the following:

- Displaying a List of ATM Connections
- Displaying the Status of a Single ATM Connection
- Deleting ATM Connections
- Configuring SPVC/SPVP Overrides on Single-Ended Connections
- Rerouting a P2MP Party
- Deleting a P2MP Party Configuration
- Testing ATM Connections

Displaying a List of ATM Connections

To display a list of all ATM connections on the current AXSM, use the following procedure:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **dspcons** command as shown in the following example to display a list of all active ATM connections on the current AXSM.

```
M8850_LA.3.AXSM.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld     Admn   Alarm
------    ----------   ----   --------   ---    ----     ----   -----
    0   01 0100 00100   VCC        cbr1   S   00000001     UP   none
    1   02 0101 00101   VCC        cbr1   S   00000002     UP   none
    2   03 0105 00105   VCC        cbr1   M   00000003     UP   none

M8850_LA.3.AXSM.a >
```

> **Note** The Identifier column identifies the interface number, VPI, and VCI for each connection on the current card. You will need these values for any connection you want to display, configure, or delete.

Displaying the Status of a Single ATM Connection

Use the following procedure to display the configuration and status of a single ATM connection:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **dspcons** command as shown in the following example to display a list of all active connections on the current AXSM.

```
M8850_LA.3.AXSM.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld     Admn   Alarm
------    ----------   ----   --------   ---    ----     ----   -----
     0  01 0101 00101   VCC        cbr1   S   00000006     UP      none
     1  02 0103 00103   VCC        cbr1   M   00000007     UP      none
     2  03 0105 00105   VCC        cbr1   M   00000003     UP  multiple

M8850_LA.3.AXSM.a >
```

Step 3 Enter the **dspcon** command as follows to display the configuration and connection status of a single connection on the current AXSM.

```
dspcon <ifNum> <vpi> <vci>
```

Replace <*ifNum*> with the number of the interface whose connection you want to display. Replace <*vpi*> with the VCI of the connection you want to display. Replace <*VCI*> with the VCI of the connection you want to display.

In the following example, the user displays the connection on port 2, with a VPI of 103 and a VCI of 103.

```
M8850_LA.3.AXSM.a > dspcon 2 103 103
-------------------------------------------------------------------------
Local   :                 NSAP  Address                    vpi       vci
(M)       47009181000000000036B5E2BB200000103180200       103       103
Remote  :                 NSAP  Address                    vpi       vci
(S)       47009181000000000036B5E2BB200000103180100        101       101
-------------------------------------------------------------------------
Conn. Type    :        VCC                      Admn Status  :    ADMN-UP
Service Type  :       cbr1                      Oper Status  :         OK
Controller    :          2                      Record #     :          1
SlavePersist  :        YES                      Cast-type    :        P2P
-------------------------------------------------------------------------
Local PCR     :         50                      Remote PCR   :         50
Local SCR     :        N/A                      Remote SCR   :        N/A
Local CDV     :         -1                      Remote CDV   :         -1
Local CTD     :         -1                      Remote CTD   :         -1
Local MBS     :        N/A                      Remote MBS   :        N/A
Max Cost      :         -1                      Frame discard:   DISABLED
Local CDVT    :     250000                      OAM segment  :    ENABLED
Local PctUtil :        100                      Rmt PctUtil  :        100
Priority      :          8
Pref Rte Id   :          0                    Directed route:          NO
```

```
------------------------------------------------------------------------

Type <CR> to continue, Q<CR> to stop:
OAM CC Config :   DISABLED                      Statistics   :   DISABLED
------------------------------------------------------------------------
Loopback Type : No  Lpbk | Dir: N/A     | Status: No Lpbk | RTD:      0us
------------------------------------------------------------------------

------------------------------------------------------------------------
Port side Tx  :     normal                      Swth side Tx :     normal
Port side Rx  :     normal                      Swth side Rx :     normal
------------------------------------------------------------------------
I-AIS/RDI   E-AIS/RDI   CONDITIONED   CCFAIL   IfFail   Mismatch  LMI-ABIT
   NO          NO           NO          NO       NO        NO         NO
------------------------------------------------------------------------

M8850_LA.3.AXSM.a >
```

Deleting ATM Connections

Use the following procedure to delete an ATM connection.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **delcon** command as follows to delete an ATM connection:

delcon *<ifNum> <vpi> <vci>*

Replace <*ifNum*> with the number of the interface whose connection you want to delete. Replace <*vpi*> with the VCI of the connection you want to delete. Replace <*VCI*> with the VCI of the connection you want to delete.

Note Enter the **dspcons** command to obtain the interface number, VPI, and VCI of a connection.

In the following example, the user deletes the connection on port 2 with a VPI of 101 and a VCI of 101.

```
M8850_LA.3.AXSM.a > delcon 2 101 101
Deletion successful

M8850_LA.3.AXSM.a >
```

Removing a Cisco IGX Feeder Connection

This procedure describes how to remove an IGX feeder connection from an MGX 8850 AXSM card.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **delcon** or **delcons** command to delete all ATM connections to the IGX feeder.

Note Enter the **dspcons** command to obtain the interface number, VPI, and VCI of a connection.

In the following example, the user deletes the connection on port 2 with a VPI of 101 and a VCI of 101.

```
M8850_LA.3.AXSM.a > delcon 2 101 101
Deletion successful

M8850_LA.3.AXSM.a >
```

Step 3 Enter the **dellmi** <*ifNum*> command to delete the feeder line to the IGX. Replace <*ifNum*> with the number of the interface whose feeder line you want to remove.

In the following example, the user removes the LMI on port 2:

```
MGX8850.1.AXSM.a > dellmi 2

MGX8850.1.AXSM.a >
```

Step 4 Enter the **cc** command to change to the PXM controller card.

Step 5 Log in to the IGX switch and enter the **cnftrk** command to set the UXM trunk configuration so that it does to not listen for LMI/AAL5 messages.

Note Refer to the *Cisco WAN Switching Command Reference, Release 9.3.3* to see a description of the **cnftrk** command.

Step 6 Enter the **dntrk** command to bring down the UXM interface.

Note Refer to the *Cisco WAN Switching Command Reference, Release 9.3.3* to see a description of the **dntrk** command.

Step 7 Enter the **cnfswfunc** command to turn off the feeder functionality on the IGX node.

Note Refer to the *Cisco WAN Switching Command Reference, Release 9.3.3* to see a description of the **dntrk** command.

Note For a more detailed description of IGX feeders, see the *Cisco IGX 8400 Series Provisioning Guide, Release 9.3.3*.

Configuring SPVC/SPVP Overrides on Single-Ended Connections

If a single-ended SPVC is established, but the port on the slave end if already in use by and SVC or an SVP, you can configure the SPVC to override existing SVCs/SVPs through the **cnfsvcOverride** command. If the SVC Override option is enabled, the existing SVC is torn down, and the SPVC is established.

In the Cisco MGX PXM1E-based and PXM45-based switches, single-ended SPVC connections can override of SVCs and SVPs. SPVPs can only override SVPs. Use the following procedures to configure SPVC/SPVP override options.

Enter the **cnfsvcOverride -spvcoverridesvc enable** command to enable all single-ended SPVC connections on the switch to override existing SVCs on a slave endpoint upon establishment, as shown in the following example:

```
MGX8850.1.PXM.a > cnfsvcoverride -spvcoverridesvc enable
```

Enter the **cnfsvcOverride -spvcoverridesvp enable** command to enable all single-ended SPVC connections on the switch to override existing SVPs on a slave endpoint upon establishment, as shown in the following example:

```
MGX8850.1.PXM.a > cnfsvcoverride -spvcoverridesvp enable
```

Enter the **cnfsvcOverride -spvpoverridesvp enable** command to enable all single-ended SPVP connections on the switch to override existing SVPs on a slave endpoint upon establishment, as shown in the following example:

```
MGX8850.1.PXM.a > cnfsvcoverride -spvpoverridesvp enable
```

Enter the **dspsvcoverride** command at the active PXM card to verify the current SPVC/SPVP override configuration for the node.

```
MGX8850.1.PXM.a > dspsvcOverride
spvcoverridesvc:          Disabled
spvcoverridesvp:          Disabled
spvpoverridesvp:          Enabled
```

Disabling SVC Override Option

Enter the **cnfsvcdisable** command at the active PXM card to disable the SVC Override option.

Note If you disable this option, the SPVP cannot override the SVP on the same port.

Rerouting a P2MP Party

Before you can reroute a configured party on a P2MP connection, you must bring the party down with the **dnparty** command. Once the party's new route is configured, you can bring the party back up with the **upparty** command.

The following procedure provides detailed steps for rerouting a party.

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 At the active PXM45 prompt, enter the **dspparties** command to display all parties on the node.

```
MGX8850.8.PXM.a > dspparties 5.3 100 100
Port                   Vpi Vci              Owner      State      Persistency
-----------------------------------------------------------------------------
5.3          100 100    OK        MASTER  Persistent
Local  Addr: 47.009181000000001029300121.000000050300.00

Remote Party 100 101    OK        PARTY  Persistent
Remote Addr: 47.00918100000000c043002de1.000000050300.00
Endpoint Reference: 10
Remote Party 100 110    OK        PARTY  Persistent
Remote Addr: 47.00918100000000c043002de1.000000050300.00
```

```
Endpoint Reference: 11
```

To display information about the specific party you want to modify, enter the **dspparty** command as follows:

MGX8850.8.PXM.a > **dspparty** *<portid>* *<vpi>* *<vci<* **-epref** *<epref>*

Table 4-13 describes the **dspparty** command parameters.

Table 4-13 addparty Command Parameters

Parameter	Description
port	Port identifier, in the format [shelf.]slot[:subslot].port[:subport]
vpi	vpi range (UNI: 0..255 | NNI: 0..4095)
vci	vci range 35..65535
epref	endpoint reference range 1..32767

Step 3 Enter the **dnparty** command to bring down the party you want to reroute.

MGX8850.8.PXM.a > **dnparty** *<port>* *<vpi>* *<vci>* *<epref>*

Table 4-13 describes the **dnparty** command parameters.

Step 4 Enter the **rrtparty** command to reroute the appropriate party.

MGX8850.8.PXM.a > **rrtparty** *<port>* *<vpi>* *<vci>* *<epref>*

Table 4-13 describes the **rrtparty** command parameters.

Step 5 Enter the **upparty** command to bring the rerouted party back up.

MGX8850.8.PXM.a > **upparty** *<port>* *<vpi>* *<vci>* *<epref>*

Table 4-13 describes the **upparty** command parameters.

Step 6 Enter the **dspparty** command as shown in the following example to verify that the party was rerouted correctly.

MGX8850.8.PXM.a > **dspparty** *<portid>* *<vpi>* *<vci<* -epref *<epref>*

Deleting a P2MP Party Configuration

Before you can delete a P2MP connection, you must first delete all parties associated with that connection. A P2MP connection will remain as long as there are parties configured. For example, a P2MP connection that has 100 parties will remain in service, even if 99 of those parties are down.

To delete a party from a P2MP connection, enter the **delparty** command, as shown in the following example:

MGX8850.8.PXM.a > **delparty** *<port>* *<vpi>* *<vci>* *<epref>*

The **delparty** command parameters are the same parameters you set with the **addparty** command.

One you have deleted all parties on a P2MP connection, you can delete the connection itself by entering the **delcon** command as follows:

```
MGX8850.10.AXSM.a > delcon <ifNum> <vpi> <vci>
```

Replace the *ifNum* parameter with the interface or port number. The *vpi* and *vci* parameters are described earlier in this chapter.

Testing ATM Connections

The following sections describe how to test the integrity of ATM connections in the ingress and egress direction:

- Testing ATM Connections in the Egress Direction
- Testing ATM Connections in the Ingress Direction
- Displaying ATM Connection Test Results

Testing ATM Connections in the Egress Direction

The **tstconseg** command checks to see if the switch can communicate with both ends of the connection in the egress direction. To test the egress direction of a ATM connection with the **tstconseg** command, enter the **tstconseg** command as follows:

tstconseg <*ifNum*> <*vpi*> <*vci*> [**-num** <*iterations*>]

Replace <*ifNum*> with the number of the interface whose connection you want to test. Replace <*vpi*> with the VPI of the connection you want to test. Replace <*VCI*> with the VCI of the connection you want to test. If you want to specify the number of times a collection of supervisory cells should traverse the connection, enter the optional **-num** keyword, followed by the number of consecutive times you want to run the test on the specified connection. You can run a test up to 10 times for a single execution of the **tstconseg** command.

Note If you do not specify the **-num** <*iterations*> option, the test will run one time only.

Note Enter the **dspcons** command to obtain the interface number, VPI, and VCI of a connection.

In the following example, the user runs two consecutive tests in the egress direction of the connection on port 2, VPI 103, VCI 103.

```
M8850_LA.3.AXSM.a > tstconseg 2 103 103 -num 2
tstconseg is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
02.0103.00103:    OAM Lpbk     egress      Success       2616 microsec
tstconseg is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
02.0103.00103:    OAM Lpbk     egress      Success       2624 microsec

M8850_LA.3.AXSM.a >
```

Testing ATM Connections in the Ingress Direction

The **tstdelay** command checks to see if the switch can communicate with both ends of the connection in the ingress direction, and it returns a measurement of the delay across the connection. To test the ingress direction of an ATM connection, enter the **tstdelay** command as follows:

tstdelay <*ifNum*> <*vpi*> <*vci*> [**-num** <*iterations*>]

Replace <*ifNum*> with the number of the interface whose connection you want to test. Replace <*vpi*> with the VPI of the connection you want to test. Replace <*VCI*> with the VCI of the connection you want to test. If you want to specify the number of times a collection of supervisory cells should traverse the connection, enter the optional **-num** keyword, followed by the number of consecutive times you want to run the test on the specified connection. You can run a test up to 10 times for a single execution of the **tstdelay** command.

Note If you do not specify the **-num** <*iterations*> option, the test will run one time only.

Note Enter the **dspcons** command to obtain the interface number, VPI, and VCI of a connection.

In the following example, the user runs five consecutive tests in the ingress direction on the connection on port 1, VPI 101, VCI 101.

```
M8850_LA.3.AXSM.a > tstdelay 1 101 101 -num 5
tstdelay is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0101.00101:    OAM Lpbk     ingress     Success         821 microsec
tstdelay is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0101.00101:    OAM Lpbk     ingress     Success         822 microsec
tstdelay is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0101.00101:    OAM Lpbk     ingress     Success         818 microsec
tstdelay is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0101.00101:    OAM Lpbk     ingress     Success         819 microsec
tstdelay is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0101.00101:    OAM Lpbk     ingress     Success         821 microsec

M8850_LA.3.AXSM.a >
```

Displaying ATM Connection Test Results

Enter the **dspchantest** command as follows to display the results of the last or test that was run on a connection with the **tstcon** command or **tstdelay** command.

dspchantest <*ifNum*> <*vpi*> <*vci*> [**-num** <*iterations*>]

Replace <*ifNum*> with the number of the interface whose connection test results you want to display. Replace <*vpi*> with the VPI of the connection whose test results you want to display. Replace <*VCI*> with the VCI of the connection whose test results you want to display. If you want to specify the number of tests whose results you want to display, enter the options **-num** keyword, followed by the number of consecutive connections whose test results to display. You display test results for up to 10 connections.

Note The **dspchantest** command displays the results of the last test run on the specified number of connections, regardless of whether it was a **tstcon** or the **tstdelay** test.

Note If you do not specify the **-num** <*iterations*> option, the test display only the results for the last test that was run on the specified connection.

Note Enter the **dspcons** command to obtain the interface number, VPI, and VCI of a connection.

In the following example, the user displays the results for the last test that was run on the connection on port 1, VPI 101, VCI 101.

```
M8850_LA.3.AXSM.a > dspchantest 1 101 101 -num 1
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0101.00101:    OAM Lpbk     ingress     Success         821 microsec

M8850_LA.3.AXSM.a >
```

Verifying PNNI Communications

After setting up trunks or when problems occur, use the procedures in this section to determine if PNNI is operating. The next section describes how to verify PNNI communications on a single trunk. The following section describes how to verify PNNI communications between two nodes, which can be separated by multiple PNNI links.

Verifying PNNI Trunk Communication

After you configure both ends of a PNNI trunk, it should be ready to support SVCs and any SPVCs or SPVPs that are configured. To verify that the trunk is functioning, use the following procedure.

Step 1 Establish a CLI session using a user name at any access level.

If you are configuring a point-to-point (P2P) or point-to-multipoint (P2MP) connection where both ends of the trunk are connected to Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, or Cisco MGX 8830 switches, you can start the CLI session at either end of the connection.

Step 2 If you do not know the line number you are validating, you can view the port and line numbers by entering the **dsppnports** command on the active PXM card.

Note The port and line numbers appear in the *Ppid* column of the **dsppnports** command display. The first three numbers identify the slot, bay, line, and port. For example, 10:1.1:3 represents slot 10, bay 1, line 1, port 3.

Note On AXSM cards, the bay is always 1.

Step 3 Enter the **dsppnni-link** command as follows to display all PNNI links on the current switch:

```
MGX8850.7.PXM.a > dsppnni-link
```

The **dsppnni-link** command displays a report for every PNNI link on the switch. The following example shows the report for a switch with a single PNNI link.

```
M8850_LA.8.PXM.a > dsppnni-link

node index   : 1
Local pnni Port ID:   16848907          Remote pnni Port ID:   16848907
Local portId: 1:1.1:11
   Type. lowestLevelHorizontalLink     Hello state....... twoWayInside
   Derive agg...........         0     pnni Port ID....  16848907
   SVC RCC index........         0     Hello pkt RX.........    169753
                                       Hello pkt TX.........    169186
   Remote node name.......M8850_NY
   Remote node id.........56:160:47.00918100000000036b5e31b3.00036b5e31b3.01
   Upnode id..............0:0:00.000000000000000000000000.000000000000.00
   Upnode name............
   Upnode ATM addr........00.000000000000000000000000.000000000000.00
   Common peer group id...00:00.00.0000.0000.0000.0000.0000.00



node index   : 1
Local pnni Port ID:   16848917          Remote pnni Port ID:   16848917
Local portId: 1:2.1:21
   Type. lowestLevelHorizontalLink     Hello state....... twoWayInside
   Derive agg...........         0     pnni Port ID....  16848917

Type <CR> to continue, Q<CR> to stop:
   SVC RCC index........         0     Hello pkt RX.........    517200
                                       Hello pkt TX.........    517289
   Remote node name.......M8950_SF
   Remote node id.........56:160:47.00918100000000016444459b.00016444459b.01
   Upnode id..............0:0:00.000000000000000000000000.000000000000.00
   Upnode name............
   Upnode ATM addr........00.000000000000000000000000.000000000000.00
   Common peer group id...00:00.00.0000.0000.0000.0000.0000.00



node index   : 1
Local pnni Port ID:   17569793          Remote pnni Port ID:   16845569
Local portId: 12:1.1:1
   Type. lowestLevelHorizontalLink     Hello state....... twoWayInside
   Derive agg...........         0     pnni Port ID....  17569793
   SVC RCC index........         0     Hello pkt RX.........    124733
                                       Hello pkt TX.........    135695
   Remote node name.......M8830_CH
   Remote node id.........56:160:47.00918100000000001a538943.00001a538943.01
   Upnode id..............0:0:00.000000000000000000000000.000000000000.00
```

```
   Upnode name............

Type <CR> to continue, Q<CR> to stop:
   Upnode ATM addr........00.000000000000000000000000.000000000000.00
   Common peer group id...00:00.00.0000.0000.0000.0000.0000.00

M8850_LA.8.PXM.a >
```

In the **dsppnni-link** command report, there should be an entry for the port for which you are verifying communications. The Local Phy Port Id field in this entry displays the port id in the same format shown in the **dsppnports** command report. The Hello state reported for the port should be twoWayInside and the Remote note ID should display the remote node ATM address after the second colon.

In the example, the report shown is for port 1:1.1:11. The Hello state is twoWayInside, and the ATM address of the node at the other end of the link is 56:160:47.00918100000000036b5e31b3.00036b5e31b3.01 This link is ready to support connections between the two switches.

Tip If the Hello state for the link is oneWayInside, that side is trying to communicate. Check the status at the other end. Remember that the configuration at each end of the trunk must be compatible with that on the other end. For example, if ILMI auto configuration is configured at one end and not at the other, the Hello state cannot change to twoWayInside or twoWayOutside.

Verifying End-to-End PNNI Communications

When connections between two nodes travel over multiple trunks, use the following steps to verify that the PNNI communications path is operational.

Step 1 Establish a CLI session using a user name at any access level. When both ends of the communications path are connected to MGX 8850/8830 switches, you can start the CLI session at either end.

Step 2 To display information on all accessible nodes, enter the **dsppnni-node-list** command as shown in the following example:

```
MGX8850.7.PXM.a > dsppnni-node-list

node #  node id                                            node name
------- -------------------------------------------------- ----------
    1   56:160:47.00918100000000001a531c2a.00001a531c2a.01 MGX8850

node #  node id                                            node name
------- -------------------------------------------------- ----------
    2   56:160:47.00918100000000036b5e2bb2.00036b5e2bb2.01 8850_NY
```

If a switch appears in this list, you have verified communications with it.

Step 3 To display additional information on the local switch, enter the **dsppnni-node** command. For example.

```
MGX8850.7.PXM.a > dsppnni-node

node index: 1                    node name: MGX8850
   Level...............        56    Lowest.............       true
   Restricted transit..       off    Complex node........       off
   Branching restricted        on
   Admin status........        up    Operational status..        up
```

```
Non-transit for PGL election..       off
Node id...............56:160:47.00918100000000001a531c2a.00001a531c2a.01
ATM address...........47.00918100000000001a531c2a.00001a531c2a.01
Peer group id.........56:47.00.9181.0000.0000.0000.0000.00
```

Step 4 To display additional information on remote switches, enter the **dsppnni-reachable-addr** command as follows:

```
MGX8850.7.PXM.a > dsppnni-reachable-addr network

scope...............         0     Advertising node number         2
Exterior............     false
ATM addr prefix.....47.0091.8100.0000.0003.6b5e.2bb2/104
Advertising nodeid..56:160:47.00918100000000036b5e2bb2.00036b5e2bb2.01
Node name...........8850_NY
```

The remote node ATM address appears in the Advertising nodeid row. The information before the first colon (56) is the PNNI level, the information between the first and second colons (160) is the ATM address length, and the remainder of the node ID is the ATM address for the remote node.

Tip If you cannot verify communications with a remote node, try verifying communications across each of the links between the nodes as described in the previous section, "Verifying PNNI Trunk Communication."

Managing IMA Groups

The "Configuring Inverse Multiplexing over ATM" section in Chapter 3, "Provisioning ATM Services," describes how to create and configure IMA groups. The following sections provide procedures for doing the following:

- Displaying a List of IMA Groups
- Displaying the Configuration for a Single IMA Group
- Configuring IMA Groups
- Configuring an IMA Link
- Deleting Lines from an IMA Group
- Deleting an IMA Group
- Administratively Enabling and Disabling IMA
- Testing an IMA Link

Displaying a List of IMA Groups

To display a list of IMA groups on the current AXSM card, enter the **dspimagrps** command as follows:

```
M8850_LA.12.AXSME.a > dspimagrps
Ima  Min  Tx   Rx   Tx   Diff                NE-IMA                 FE-IMA  IMA
Grp  Lnks Frm  Frm  Clk  Delay                State                  State  Ver
          Len  Len  Mode (ms)
--------------------------------------------------------------------------------
 1.1   1  128  128  CTC  275           Operational           Operational  1.0
```

Displaying the Configuration for a Single IMA Group

To display the configuration of a single IMA group, enter the **dspimagrp** command as follows:

```
M8850_LA.12.AXSME.a >  dspimagrp <group>
```

Replace <*group*> with the number of the IMA group you want to display, in the format *bay.group*.

Note You can view the available group numbers in the **dspimagrps** display.

The following example shows the information you can display with the **dspimagrp** command:

```
M8850_LA.12.AXSME.a > dspimagrp 1.1
    Group Number                     : 1.1
    NE IMA Version                   : 1.0
    Group Symmetry                   : Symm  Operation
    Tx Min Num Links                 : 1
    Rx Min Num Links                 : 1
    NE Tx Clk Mode                   : CTC
    FE Tx Clk Mode                   : CTC
    Tx Frame Len (bytes)             : 128
    Rx Frame Len (bytes)             : 128
    Group GTSM                       : Up
    NE Group State                   : Operational
    FE Group State                   : Operational
    Group Failure Status             : No Failure
    Tx IMA ID                        : 255
    Rx IMA ID                        : 255
    Max Cell Rate (c/s)              : 14367
    Avail Cell Rate (c/s)            : 14367
    Diff Delay Max  (msecs)          : 275
    Diff Delay Max Observed (msecs) : 0
    Accumulated Delay (msecs)        : 0
    Clear Accumulated Delay Status   : Not In Progress
    GTSM Up Integ Time (msecs)       : 0

Type <CR> to continue, Q<CR> to stop:
    GTSM Dn Integ Time (msecs)       : 4000
    Num Tx Cfg Links                 : 4
    Num Rx Cfg Links                 : 4
    Num Act Tx Links                 : 4
    Num Act Rx Links                 : 4
    Least Delay Link                 : 1.1
    Tx Timing Ref Link               : 1.1
    Rx Timing Ref Link               : 1.1
    Group Running Secs               : 2145256
    Alpha Val                        : 2
    Beta Val                         : 2
    Gamma Val                        : 1
    Tx OAM Label                     : 1
    Rx OAM Label                     : 1
    Test Pattern Procedure Status    : Disabled
    Test Link                        : Unknown
    Test Pattern                     : 255
    Stuff Cell Indication (frames)   : 1
    Version Fallback Enabled         : true
    Auto-Restart Mode                : disable
    Rx IMA ID Expected               : -1
    Auto-Restart Sync State          : disable

M8850_LA.12.AXSME.a >
```

Configuring IMA Groups

To configure an IMA group, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP 1 privileges or higher.

Step 2 If you do not know the number of the IMA group you want to configure, enter the **dspimagrps** command to list the IMA groups configured on the current card.

Step 3 Enter the **dspimagrp** <*group*> command to display the configuration information for the particular IMA group that you want to configure. Replace <*group*> with the number of the IMA group you want to display, as shown in the following example:

```
M8850_LA.12.AXSME.a > dspimagrp 1.1
    Group Number                     : 1.1
    NE IMA Version                   : 1.0
    Group Symmetry                   : Symm  Operation
    Tx Min Num Links                 : 1
    Rx Min Num Links                 : 1
    NE Tx Clk Mode                   : CTC
    FE Tx Clk Mode                   : CTC
    Tx Frame Len (bytes)             : 128
    Rx Frame Len (bytes)             : 128
    Group GTSM                       : Up
    NE Group State                   : Operational
    FE Group State                   : Operational
    Group Failure Status             : No Failure
    Tx IMA ID                        : 255
    Rx IMA ID                        : 255
    Max Cell Rate (c/s)              : 14367
    Avail Cell Rate (c/s)            : 14367
    Diff Delay Max  (msecs)          : 275
    Diff Delay Max Observed (msecs)  : 0
    Accumulated Delay (msecs)        : 0
    Clear Accumulated Delay Status   : Not In Progress
    GTSM Up Integ Time (msecs)       : 0

Type <CR> to continue, Q<CR> to stop:
    GTSM Dn Integ Time (msecs)       : 4000
    Num Tx Cfg Links                 : 4
    Num Rx Cfg Links                 : 4
    Num Act Tx Links                 : 4
    Num Act Rx Links                 : 4
    Least Delay Link                 : 1.1
    Tx Timing Ref Link               : 1.1
    Rx Timing Ref Link               : 1.1
    Group Running Secs               : 2145256
    Alpha Val                        : 2
    Beta Val                         : 2
    Gamma Val                        : 1
    Tx OAM Label                     : 1
    Rx OAM Label                     : 1
    Test Pattern Procedure Status    : Disabled
    Test Link                        : Unknown
    Test Pattern                     : 255
    Stuff Cell Indication (frames)   : 1
    Version Fallback Enabled         : true
    Auto-Restart Mode                : disable
    Rx IMA ID Expected               : -1
    Auto-Restart Sync State          : disable

M8850_LA.12.AXSME.a >
```

This sample **dspimagrp** command shows the configuration parameters for an IMA group on the AXSM-E card that is installed in slot 12.

Step 4 To configure an IMA group, enter a **cnfimagrp** command in the format shown below:

cnfimagrp <**-grp** *group*> [**-ver** <*version*>] [**-txm** <*minLinks*>] [**-txid** <*txImaId*>] [**-txfl** <*txFrameLen*>] [**-dd** <*diffDelayMax*>] [**-uptim** <*groupUpTime*>] [**-dntim** <*groupDownTime*>] [**-vfb** <*verFallback*>] [**-mode** <*autoRestart*>] **-rxid** <*rxImaIdExpected*>]

Table 4-14 lists and describes the parameters that you use in configuring an IMA group on an AXSM card.

Table 4-14 Parameters for cnfimagrp Command

Parameter	Description
group_num	Enter the number for the IMA group you want to configure, in the format *bay.group*. For example: 1.16 The bay number is 1 or 2, and the group number is in the range from 1 through 16. Use the **dspimagrps** command to display the configured IMA groups.
version	The protocol version of the IMA group. • 1 = IMA version 1.0 • 2 = IMA version 1.1
minLinks	The minimum number of links that will allow the IMA group to be operational (Range: 1–16). The *minLinks* value is configurable ONLY for IMA version 1.1. For IMA version 1.0, the *minLinks* value is always 128.
txImaId	The IMA ID number transmitted in the IMA ID field of the ICP cell (Range: 0–255).
txFrameLen	The length of transmitted IMA frame in megabytes. For IMA version 1.0, the *txImaFrameLength* value is always 128. For version 1.1, the *txImaFrameLength* value can be 32, 64, 128, or 256.
diffDelayMax	The maximum differential delay in milliseconds (Range: 1–279). Defaults: T1 = 275 E1 = 220
groupUpTime	The group up time. Range: 0–400000 milliseconds. Default: 10000.
groupDownTime	The group down time. Range: 0–100000 milliseconds. Default: 2500.
verFallback	Enables/disables version fallback on the IMA group. Enter 1 to enable version fallback on the specified IMA group, or 2 to disable version fallback on the specified IMA group. **Note** You must set version fallback on the card level with the **cnfimaparms** -fallback <*1*|*2*> command before you set it for each individual IMA group with the **cnfimagrp -vfb** <*1*|*2*> command.
autoRestart	Enables, disables, or re-uses IMA auto restart functionality for the current group. Enter **1** to disable IMA auto-restart. Enter **2** to relearn IMA auto-restart, or enter **3** to reuse a previous IMA auto-restart.
rxImaIdExpected	Identifies the expected received IMA ID. The IMA Id is a number in the range from -1 through 255.

In the example that follows, the user modifies the IMA group 1.16 as follows:

- the minimum number of links that will allow the IMA group to be operating is 16
- the transmitted IMA ID is 255
- the transmitted frame length is 128 megabytes
- maximum differential delay is 276 milliseconds

```
MGX8850.2.AXSME.a > cnfimagrp 1.16 -min 128 -id 255 -txm 128 -dd 276
MGX8850.2.AXSME.a >
```

Step 5 Enter a **dspimagrp** command to verify IMA group configuration changes.

Configuring an IMA Link

Enter the **cnfimalnk** command as follows to add one or more lines to an IMA group:

cnfimalnk -**lnk** <*link*>, **-uplif** <*lifUpTime*>, **-dnlif** <*lifDnTime*>, **-uplods** <*lodsUpTime*>, **-dnlods** <*lodsDnTime*>

Table 4-15 describes the parameters for the **addlns2imagrp** command.

Table 4-15 Parameters for addlns2imagrp Commands

Parameter	Description
link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16
lifUpTime	Loss of IMA Frame (LIF) integration up time. Range: 0–400000 milliseconds. The LIF defect is the occurrence of persistent OIF (Out of IMA Frame) anomalies for at least 2 IMA frames.
lifDnTime	Loss of IMA Frame (LIF) integration down time. Range 0–100000 milliseconds. The LIF defect is the occurrence of persistent OIF (Out of IMA Frame) anomalies for at least 2 IMA frames.
lodsUpTime	Link Out of Delay Synchronization (LODS) integration up time. Range: 0–400000 milliseconds. The LODS is a link event indicating that the link is not synchronized with the other links within the IMA group.
lodsDnTime	Link Out of Delay Synchronization (LODS) integration down time. Range 0–100000 milliseconds. The LODS is a link event indicating that the link is not synchronized with the other links within the IMA group.

In the following example, the user modifies the IMA link 1.1 to have an LIF integration up time, LIF integration down time, LODS integration up time, and LODS integration down time of 20,000 milliseconds.

```
M8850_LA.12.AXSME.a > cnfimalnk -lnk 1.1 -uplif 20000 -dnlif 20000 -uplods 20000
 -dnlods 20000

M8850_LA.12.AXSME.a >
```

Deleting Lines from an IMA Group

Enter the **delimalnk** command as follows to delete a line from an IMA group:

```
M8850_LA.12.AXSME.a > delimalnk <link>
```

Note Deleting a line from an IMA group reduces the available throughput for the group and may impact ATM traffic through the group. Also, the switch does not allow you to delete lines when the resulting number of lines would be less than the minimum number of lines specified for group operation. To change the minimum number of lines for an IMA group, use the **cnfimagrp** command.

The following example deletes the IMA link 1 in the top bay.

```
M8850_LA.12.AXSME.a > delimalnk 1.1

M8850_LA.12.AXSME.a >
```

Deleting an IMA Group

To delete an IMA group, use the following procedure.

Step 1 Delete all connections that are associated with the IMA group (**dspcons** and **delcon** commands).

Tip The port number shown in the **dspcons** display is the IMA group number.

Step 2 Delete all resource partitions that are associated with the IMA group (**delrscprtn** command).

Step 3 Delete all ports that are associated with the IMA group (**delport** command).

Step 4 Delete all links that are associated with the IMA group (**delimalnk** command).

Step 5 Enter the **delimagrp** command as follows:

delimagrp e <*group*>

Replace <*group*> with the number of the IMA group you want to delete, in the format *bay.group*.

Note You can view the available group numbers in the **dspimagrps** display.

The following example shows how to use the **delimagrp** command:

```
M8850_LA.12.AXSME.a > delimagrp 1.1

M8850_LA.12.AXSME.a >
```

Administratively Enabling and Disabling IMA

You can administratively enable or disable and IMA group to change the configuration or perform other maintenance on an IMA group. You administratively enable or disable an IMA with the following commands:

Command	Comments
dnimagrp <*group*>	Administratively disables an IMA group. No user traffic can flow through that IMA group. Replace <*group*> with the number of the IMA group you want to disable, in the format *bay.group*. **Note** Enter the **dspimagrps** command to see the group numbers for all configured IMA groups on the current card.
upimagrp <*group*>	Administratively enables an IMA group. The IMA group is ready to carry user traffic. Replace <*group*> with the number of the IMA group you want to enable, in the format *bay.group*. **Note** Enter the **dspimagrps** command to see the group numbers for all configured IMA groups on the current card.

Testing an IMA Link

You can check the validity of an IMA connection by sending a test pattern to the link. If the test pattern number is the same when it arrives at the receive endpoint of the link, then the link is valid. If the test pattern number is different or does not arrive at all, then the link is invalid. You can run only one test at a time. Use the following procedure to start and configure a connectivity test on an IMA link.

Step 1 Establish a configuration session with the appropriate AXSM using a user name with GROUP 1 privileges or higher.

Step 2 Enter the **startimalnktst** command as follows to start an IMA test on an IMA link:

startimalnktst <*group*> <*link*> <*test Pattern*>

Replace <*group*> with the number of the IMA group that owns the link you want to test, in format *bay.group*. Replace <*link*> with the number of the IMA link you want to test, in the format *bay.link*.Replace <*test Pattern*> with the number of the transmit test pattern, in the range from 0 through 254.

Note If no value is entered, -1 is the default, which causes the program to select a pattern.

Note If you do not know the number of the IMA group whose link you want to test, enter the **dspimagrps** command to list the IMA groups configured on the current card. If you do not know the number of the IMA link you want to test, enter the **dspimalnks** command to list the IMA links configured on the current card.

In the following example, the user starts an IMA link test on bay 1, group 1, link 2, using test pattern 1:

```
MGX8850.2.AXSME.a> startimalnktst 1.1 2 1
```

Step 3 Enter the **stopimalnktst** <*group*> command to stop the IMA link test that was started with the **startimalnktst** command.

Step 4 Replace <*group*> with the number of the IMA group that owns the link that is being tested, in format *bay.group*.

In the following example, the user stops an IMA link test that is running on bay 1, group 1:

```
MGX8850.2.AXSME.a> stopimalnktst 1.1
```

Modifying an IMA Link Test

To modify an IMA test link or IMA test pattern after the test has been started, enter the **cnfimalnktst** command as follows:

cnfimalnktst -grp <*group*> **-lnk** <*link*> **-pat** <*testPat*>

Replace <*group*> with the number of the IMA group that owns the link whose test you want to modify, in format *bay.group*. Replace <*link*> with the number of the IMA link whose test you want to modify, in the format *bay.link*. Replace <*test Pattern*> with the number of the transmit test pattern you want to modify, in the range from 0 through 254.

In the following example, the user changes the link to 3 and the test pattern to 2 on IMA group 1.1:

```
MGX8850.2.AXSME.a> cnfimalnktst 1.1 3 2
```

Managing Loopbacks

The AXSM cards support line and channel loopbacks.

Line loopbacks can be enabled by:

- Manually placing the line in loopback mode using AXSM CLI commands
- Enabling loopback code detection using AXSM CLI commands

Channel loopbacks are enabled through use of the following CLI commands on the AXSM cards:

- **addlnloop**—Add local or remote loopback, or remove loopback from a line.
- **dellnloop**—Delete local or remote loopback.

For more information on the use of these commands, see Chapter 5, “AXSM Command Reference.”

CHAPTER 5

AXSM Command Reference

This chapter provides descriptions of the commands that are available on the AXSM CLI. The commands are in alphabetical order. The descriptions include the following information about the commands:

- The name of the command as it is entered in the CLI.
- The full English name of the command and the cards on which it is available.
- A description of the function of the command.
- The syntax of the command.
- The syntax description of the parameters.
- The related commands that can be used in conjunction with the command.
- The attributes of the command:
  - log: indicates whether the command is logged in a file or not.
  - state: indicates the state which the card must be in to execute the command.
  - privilege: indicates the privilege level that the user must have to execute the command.
- An example of using the command in the CLI, including the output displayed and any messages that are returned.

addapsln

Add APS Line—AXSM, AXSM-E, AXSM-XG

Designates a pair of lines (*workingline, protectionIndex*) as APS lines. To configure the APS parameters, use the **cnfapsln** command after creating the lines using the **addapsln** command.

Note The APS for an SRME requires a mini-backplane in the Cisco MGX 8850 chassis but not in the Cisco MGX 8830 chassis. This SRME mini-backplane differs from the mini-backplane for the AXSM.

APS Overview

Automatic Protection Switching (APS) is a standards-based redundancy scheme which enhances network reliability by protecting against line failure. APS is defined in Bellcore and ITU standards for North American SONET and international Synchronous Digital Hierarchy (SDH) optical network links. The relevant standards are Bellcore GR-253 and ITU-T G.783.

APS enables a pair of SONET lines to be configured for line redundancy. The APS pair consists of a working line (*workingIndex*) and a protection line (*protectIndex*), where one line is active and the other is a backup. Whether or not the backup line passes traffic while in standby mode depends on the APS architecture mode (*archmode*).

Coordination of line switching is controlled by an in-band signaling protocol. If the fiber optic carrier for the active line is severed or damaged, the in-band signaling protocol must detect the fault within 10 milliseconds. After the in-band signaling protocol has detected the fault, it must switch the user traffic to the standby line within 50 milliseconds.

When the *revertive* option is enabled (see **cnfapsln**), the in-band signaling protocol will attempt to switch the user traffic back to the working line from the protection line after the working line becomes functional again. However, it must wait for the configured time period (*wait to restore*) to elapse.

Direction

APS can be configured in two directions (see *direction* parameter in **cnfapsln**), bidirectional and unidirectional. Bidirectional means that both the receiving and transmitting paths are switched. Unidirectional means that only the affected path, receiving or transmitting, is switched.

Same-card APS

In same-card APS, the working bay and protection bay must be the same, and the working line and protection line must be adjacent.

Architecture mode 1:1 is supported only on same-card APS.

Cross-card APS

In cross-card APS, the working slot and the protection slot must be adjacent. The working bay and line number, and the protection bay and line number must be the same. Card redundancy must be configured on the two cards before cross-card APS can be added (see the addred command).

Architecture modes 1+1, Annex 1+1, and Straight 1+1 Nok1k2 are supported on same-card as well as cross-card APS.

APS Architecture Modes

Table 5-1 describes the types of APS supported on the different AXSM cards. Refer to Table 5-1 when you configure the APS architecture mode with the **addapsln** command.

Table 5-1 APS Support on AXSM Cards

Standard	AXSM/A or AXSM/B (op A) [1]	AXSM/B (op B) [2]	AXSM-E	AXSM-XG
GR-253-Core 1:1 Intra-card	Yes	Yes	Yes	Yes
GR-253-Core 1:1 Inter-card	No	No	No	No
ITU-T G.783 Annex A 1:1 Intra-card	No	Yes	Yes	Yes
ITU-T G.783 Annex A 1:1 Inter-card	No	No	No	No
GR-253-Core 1+1 Intra-card [3]	Yes	Yes	Yes	Yes
GR-253-Core 1+1 Inter-card	Yes	Yes	Yes	Yes
ITU-T G.783 Annex A 1+1 Intra-card	No	Yes	Yes	Yes
ITU-T G.783 Annex A 1+1 Inter-card	No	Yes	Yes	Yes
ITU-T G.783 Annex B 1+1 Intra-card	No	Yes	Yes	Yes
ITU-T G.783 Annex B 1+1 Inter-card	No	Yes	Yes	Yes

1. When an AXSM/B card runs in opA mode, it uses one frame only. AXSM/B cards support the same features as AXSM/A card.
2. When an AXSM/B card runs in opA mode, it uses two framers. AXSM/B cards support the same features as AXSM/A card.
3. For 1:1 intra-card APS, the working and protection lines must be adjacent to each other and on a single back card. The working line must be an odd-numbered line, the protection line must be an even-numbered line. The protection line number must be exactly one number higher than the working line's number. For example, if the working line number is 1.1, then the protection line number must be 1.2, and so forth. Note that 1:1 intra-card APS is no supported on the AXSM-1-9953-XG, the AXSM-1-2488, and the AXSM-2-622-E cards.

Depending on the type of AXSM card, the following APS architecture modes (*archmode*) are supported:

- 1 = 1+1; Provides line redundancy with traffic on both lines
- 2 = 1:1; Provides line redundancy with traffic on the active line only.
- 3 = annexB 1+1
- 4 = ycable 1+1 Annex B
- 5 = straight cable 1+1

Note The GR.253 protocol is supported in modes 1 and 2 on AXSM/A.

Note The GR.253 and the ITU G.841 AnnexA protocols are supported in modes 1 and 2 on AXSM/B, AXSM-E, and AXSM-XG.

Note Other architecture mode options may be displayed by the CLI when the **addapsln** command is entered with no parameters, but they are not supported at this time.

AXSM/A and AXSM/B APS Issues

AXSM PXM45-based software has two different operating modes:

- AXSM-A mode
- AXSM-B mode

Note To see the APS mode of an AXSM, run **dspcd** on the CLI of the AXSM. The field labeled "Card Operating Mode" shows either AXSM-A or AXSM-B.

AXSM PXM1-based cards and below have only the AXSM-A mode. AXSM PXM45-based cards have both AXSM-A and AXSM-B modes.

When you upgrade from a PXM1-based switch to a PXM45-based switch, the AXSM will still be in AXSM-A mode. To change to AXSM-B mode, use the PXM command, **enableaxsmbaps** from the PXM CLI. Refer to *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

AXSM-A mode monitors only one line at a time. AXSM-B monitors two lines at the same time. AXSM/B cards can run in either the AXSM-A or AXSM-B mode.

When using two AXSM/A cards for an APS redundant pair, if one of the AXSM/A cards does not function in the intercard state, the AXSM-A mode will not function. AXSM/A transmits RDI on both the working and protection lines.

When using two AXSM/B cards for an APS redundant pair, if one of the AXSM/B cards does not function in the intercard state, APS is unaffected.

For APS to function properly on AXSM/B, AXSM-E, and AXSM-XG, at least one front card and its back card must be functioning properly. However, signal failure will be reported from all lines on the other back card if the other back card is not present.

Syntax

addapsln -w <*workingline*> **-p** <*protectionIndex*> **-am** <*archmode*>

Syntax Description

-w <*workingline*>	Slot number, bay number, and line number of the working line in the format: *slot.bay.line*

-p <*protectionIndex*>	Slot number, bay number, and line number of the protection line in the format: *slot.bay.line*
-am <*archmode*>	The APS architecture mode to be used on the working/protection line pairs. • 1 = 1+1; Provides line redundancy with traffic on both lines • 2 = 1:1; Provides line redundancy with traffic on the active line only. • 3 = annexB 1+1 • 4 = ycable 1+1 Annex B • 5 = straight cable 1+1

Related Commands

cnfapsln, delapsln, dspapsln, dspapslns, switchapsln, dspapsbkplane, clrbecnt, dspbecnt

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Add 1+1 APS redundancy to two lines on the same AXSM card:

```
MGX8850.9.AXSM.a > addapsln 9.2.1 9.2.2 1
```

addchanloop

Add Channel Loopback—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The channel loopback tests the integrity of the connection (channel) at the local UNI or across the network. The system returns an error message if the connection is broken or incorrect data arrives at the end of the loopback. The maximum number of connection loopbacks that can exist on an AXSM is 256.

The **addchanloop** command applies to a network that is not carrying live traffic because the test is very intrusive. The test requires a testing device to generate a cell stream. The parameters for such a stream are the number of cells transmitted through the loop, the cell transfer rate, and so on. (To test connection integrity in a non-destructive way while the connection carries user data, use **tstdelay** on the ingress or **tstconseg** on the egress. These commands generate one OAM cell for each command execution.)

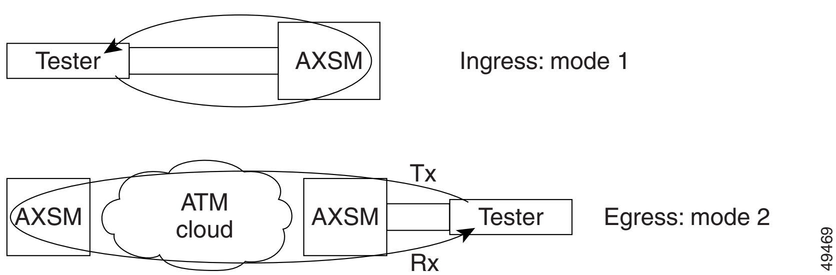
A connection can have only one loopback at a time. Therefore, you cannot add a loopback for both directions at the same time. The loopback remains until you delete it by executing **delchanloop**. To see the presence of connection loopbacks on a per-port basis, use **dspchanloop**.

The **addchanloop** command lets you specify the direction of cell flow within the loop (see Figure 5-1).

- In the ingress direction, the cells travel from the tester to the queueing engine on the AXSM; then back to the tester.
- In the egress direction, the cells travel from the tester to the local AXSM; then across the network to the remote AXSM. At the far end, the cells go to the queueing engine then return back across the network to the tester.

The maximum number of loopbacks that can exist on an AXSM is 256.

Figure 5-1 Connection (Channel) Loopbacks on the Ingress and Egress



Syntax

addchanloop <*ifNumber*> <*vpi*> <*vci*> <*loopback mode*>

Syntax Description

ifNum	The logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI of the connection. The range is 0–4095.
vci	The VCI of the connection. The range is 1–65535.
loopback mode	The direction of the loopback. • 1 = ingress direction • 2 = egress direction

Related Commands

delchanloop, **dspchanloop**

Attributes

Log: yes	State: active, standby	Privilege: SERVICE_GP

Example

Add a loopback on the connection with VPI/VCI of 1 50 on logical port 4. No message is returned unless an error occurs in command execution (such as an attempt to add a channel loopback to a connection that already has a loopback).

```
MGX8850.1.AXSM.a > addchanloop 4 1 50
```

Check for the presence of the loopback by displaying all channel loopbacks on port 4.

```
MGX8850.1.AXSM.a > dspchanloop 4
Port      Type       lVPI       lVCI       rVPI       rVCI
4     igrLpbk        1         50          0         35
```

addcon

Add Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Adds a logical connection as an SPVC on a service module. The switch assigns a 20-octet NSAP address to the slave endpoint, which is sent back to the master and uniquely identifies the endpoint on the network. An AXSM front card can support a maximum of 64K SPVCs. This command does not apply to SVCs or SVPs.

AXSM supports a maximum of 64K SPVCs. AXSME supports a maximum of 60K SPVCs–4K are reserved.

The connection is either a dual-ended connection or a single-ended connection. For a dual ended connection, you first add the endpoint at the slave-end switch. Upon successful addition of the slave endpoint, the slave-end node generates a 20 octet NSAP address for that endpoint that is used at the master endpoint. The slave endpoint identifier uniquely identifies the endpoint in the network, and you must use this identifier when adding the master endpoint of a dual-ended connection. For a single-ended connection, you add the connection only at the master end.

Note VS/VD cannot be enabled on the port with WFQ disable in SCT.

Warning **Changing connection parameters will result in a momentary loss of traffic.**

Warning **Changing routing parameters will not take effect on the slave endpoint of a DAX connection.**

Before Adding a Connection

Before you can add an SPVC, the following tasks must have been completed:

1. The switch must have a network controller (see the **addcontroller** command in the *Cisco MGX 8800/8900 Series Command Reference, Release 5.2*).
2. A physical line must be active. Use the **upln** command.
3. At least one logical port must exist on the active physical line. Use the **addport** command to create the port. If necessary, modify the port through **cnfport**.)
4. At least one resource partition must exist on the logical port. Use **addrscprtn** or **addpart**. The resource partition should be associated with the controller added in step 1.
5. Optionally, configure the version of the UNI by using the **cnfpnportsig** command at the PXM card. UNI endpoints do not require signalling. However, although the default interface type is UNI, no default exists for the *version* of UNI. Remember to up the PNNI port by using the **uppnport** command at the PXM card.

Adding a Connection

Adding a connection requires you first to provision a slave endpoint. Subsequently, you again execute **addcon** to provision a master endpoint. The master endpoint of the connection initiates the routing of the call and can be viewed as the “calling” party. The slave endpoint is the called endpoint. The following characteristics pertain to this master-slave arrangement:

- When you add a slave endpoint, the system returns a *slave endpoint identifier*. You subsequently need to provide this slave endpoint identifier when specifying the master endpoint.
- When you add the master endpoint, you must provide the slave endpoint identifier. After you finish adding the master endpoint, the switch starts routing the connection.

To modify the bandwidth parameters or configure usage parameter control (UPC), use **cnfcon** for all service types. In addition, ABR connections require more configurable parameters for implementing closed loop control. Use the **cnfabr** command to configure the ABR parameters on AXSM-E and AXSM-XG cards.

Note The **cnfabr** command is not available on AXSM/A and AXSM/B cards.

Traffic Parameters

Traffic parameters such as PCR, SCR, MBS are entered at both the master and slave endpoints for both the forward and reverse directions. Be sure that the value entered as "local" on one end is equal to the value entered as "remote" on the other end. For example, the *lpcr* on the slave endpoint should be same as the *rpcr* on the master endpoint and vice versa when you provision the connection at the other end. If you modify traffic parameters after creating a dual-ended SPVC, you must modify them using the same set of parameters at both the master endpoint and the slave endpoint. For a single-ended connection, modify parameters at the master endpoint only.

Traffic parameters such as CDV, CTD are entered at both the master and slave endpoints for both the forward and reverse directions. However, the parameters entered at the slave end are ignored during call setup. Therefore, you can specify the *lcdv*, *rcdv*, *lctd* and *rctd* options at the master end only.

Default Traffic Parameters in the Service Class Templates

The Service Class Templates (SCTs) provide the default traffic parameters for the logical ports. The default traffic parameters are set to a fraction of the bandwidth available on the logical port. The SCT ID (*sctID*) and interface type (*ifType*) parameters that are specified using the **addport** command determine which default traffic parameters are used.

Note You can create new SCTs in Cisco WAN Manager (CWM) based on the provided SCTs, but you cannot modify the values in the provided SCTs.

Note CBR.2 and CBR.3 will no longer be available in future releases. Use CBR.1 instead.

Table 5-2 Default Traffic Parameters for AXSM

	PCR	SCR	MCR	ICR	MBS	MFS	CDVT
VSI-SIG	N/P	N/P	N/P	N/P	N/P	N/U	N/P
CBR.1	50	N/A	N/A	N/A	dspmbsdft	N/U	dspcdvtdft
VBR-RT.1	50	50	N/A	N/A	dspmbsdft	N/U	dspcdvtdft
VBR-RT.2	50	50	N/A	N/A	dspmbsdft	N/U	dspcdvtdft
VBR-RT.3	50	50	N/A	N/A	dspmbsdft	N/U	dspcdvtdft

Table 5-2 Default Traffic Parameters for AXSM (continued)

	PCR	SCR	MCR	ICR	MBS	MFS	CDVT
VBR-nRT.1	50	50	N/A	N/A	dspmbsdft	N/U	dspcdvtdft
VBR-nRT.2	50	50	N/A	N/A	dspmbsdft	N/U	dspcdvtdft
VBR-nRT.3	50	50	N/A	N/A	dspmbsdft	N/U	dspcdvtdft
UBR.1	50	N/A	N/A	N/A	dspmbsdft	N/U	dspcdvtdft
UBR.2	50	N/A	N/A	N/A	dspmbsdft	N/U	dspcdvtdft
ABR	50	N/A	50	50	dspmbsdft	N/U	dspcdvtdft
CBR.2[1]	*50*	*N/A*	*N/A*	*N/A*	*dspmbsdft*	*N/U*	*dspcdvtdft*
CBR.3[2]	*50*	*N/A*	*N/A*	*N/A*	*dspmbsdft*	*N/U*	*dspcdvtdft*

1. CBR.2 will no longer be available in the near future. Use CBR.1 instead.
2. CBR.3 will no longer be available in the near future. Use CBR.1 instead.

Table 5-3 Ranges for PCR, SCR, and MCR for Each Line Type

Parameter	Range
PCR	Minimum PCR is 7 cells per second (cps). Maximum PCR depends on the physical line on which the interface is configured: Ranges are as follows: • OC12: 7–1412832 cps • OC3: 7–353208 cps • T3: 7–96000 cps for PLCP or 7–104268 cps for ADM • E3: 7–80000 cps • T1: 7–3622 cps • E1: 7–4528 cps Default: Taken from the port SCT. The service type serves as an index in choosing a PCR. The default PCR in the SCT is defined as a percent of the interface bandwidth.
SCR	Minimum SCR is 7 cells per second (cps). Maximum is limited to the PCR. Default: Taken from SCT as a percentage of PCR. The AXSM-E and AXSM-XG have a lower minimum of 3 cps, so if the derived default is less than 3, it is rounded off to 3 cps.
MCR	Same as SCR.

Service Types, CDV, and CTD

Cell delay variation (CDV) and cell transfer delay (CTD) apply to specific service types. If you attempt to configure these parameters for the wrong service type, the switch rejects the operation. Note that CTD and CDV also serve as routing cost metrics along with the maximum route cost (see **maxcost** parameter). To see how CDV and CTD apply to connection grooming, see the **cnfrteoptthresh** description.

Table 5-13 Applicable Service Types for CDV and CTD

	PERCENT			ABSOLUTE		
	AW	CTD	CDV	AW	CTD	CDV
CBR	YES	YES	YES	YES	YES	YES
RT-VBR	YES	YES	YES	YES	YES	YES
NRT-VBR	YES	N/A	N/A	YES	N/A	N/A
UBR	YES	N/A	N/A	YES	N/A	N/A
ABR	YES	N/A	N/A	YES	N/A	N/A

Routing Parameters

Routing parameter such as maximum route cost (**-mc** *maxcost*) or the routing priority (**-rtngprio** *routingPriority*) must be entered only at the master endpoint.

You can assign a priority at the master end of an SPVC or SPVP. The PNNI controller routes higher priority connections before lower priority connections. The user-configurable range for a connection is, in descending order of priority, 1–15. The default is 8.

See **cnfpri-routing** for a detailed description of the Priority Routing feature. Also, the **cnfpri-routing** command lets you configure groups of bandwidth so that the order of routing also reflects the bandwidth requirements of the connection.

A connection created with older software that does not support Priority Routing receives the default priority of 8 after an upgrade. You can modify this priority by using the **cnfcon** command.

Frame Discard

The current release supports two types of frame discard for VCCs carrying AAL5 cells. These frame discard mechanisms are *policing-based* and *congestion-based*. Policing-based frame discard depends on the **-frame** option in the **addcon** or **cnfcon** command. (Congestion-based policing for all cell streams is governed by settings in the current port SCT.) This **-frame** parameter is specified only at the master end.

When *policing-based frame discard* is enabled, the policer discards all cells of an AAL5 frame that follow a non-compliant cell. Specific actions for PCR and SCR non-compliance are detailed in the section, "Policer Settings and Consequences."

When *congestion based frame discard* is enabled in the current port-level SCT, if the arriving cells exceed an EPD threshold, the whole frame is discarded.

Note The two types of frame discard are independent of each other and may or may not coexist.

The following list shows the action taken on a connection according to the setting for frame discard. Both policing-based and congestion-based frame discard are represented. Policing-based discard through **addcon** or **cnfcon** is represented by "A," and congestion-based discard in the current port SCT is represented by "B." A value of 0 means disabled, and a value of 1 means enabled. You can check the CLP lo/hi and EPD settings for an active, port-level SCT by using the **dspportsct** command with parameters **cosThr** and **vcThr**.

Frame Discard Setting	*Policer Behavior (frame discard in **addcon**)*	*Congestion Thresholds (SCT setting)*
A = 0, B = 0	Cell-based policing	CLP lo/hi thresholds
A = 0, B = 1	Cell-based policing	EPD thresholds
A = 1, B = 0	Frame-based policing	CLP lo/hi thresholds
A = 1, B = 1	Frame-based policing	EPD thresholds

Restrictions

Frame discard applies to connections that use ATM AAL5 adaptation (ITU-T I.363.5). Although enabling frame discard on an AAL5 cell stream is not mandatory, it helps improve the useful throughput on a VC by discarding complete frames during times of congestion on the switch. Without frame discard enabled on an AA5 cell stream, corrupted AAL5 frames (containing dropped cells) can reach upper layers and trigger numerous re-sends. Conversely, enabling frame discard on other (non-AAL5) types of cell streams can bring uncertain results. In a worst case, total discard of end-to-end traffic of a non-AAL5 stream can occur in either direction.

The service module hardware does not support frame-based discard on VPCs. Only VCCs support frame-based discard.

Note An important caveat exists for VPCs that were added with frame discard enabled prior to version 3.0.23 or 4.0.10 (the releases where the two types of frame discard became available). The switch lets you enable frame discard on a VPC even though hardware does not support it. If such a VPC (with frame discard enabled) already exists on the node when you upgrade to 3.0.23, 4.0.10, or later, you cannot subsequently modify the VPC unless you *delete* it then re-add it with frame discard disabled. To avoid the need to delete a VPC, you must disable frame discard on any such VPCs *before* upgrading to 3.0.23, 4.0.10, or later releases.

Policer Settings and Consequences

This section describes two types of conformance tests that occur when you enable frame discard through this frame discard parameter. The tests are PCR and SCR conformance tests. The text is taken from ATM Forum standards.

The PCR conformance test is performed using GCRA1 in exactly the same manner as normal cell policing. For this test, the Action *should* be set to discard. If the PCR conformance test is deemed to be non-compliant, the action will be to discard of the cells in the current frame.

In other words, a “partial packet action” can be taken when cells in the current frame fail this conformance test. The PCR conformance test implements a partial packet discard (PPD). The policer does a complete frame discard if the first cell of the packet was discarded as a result of PCR failure

The SCR conformance test is performed using GCRA2, although it differs slightly from the normal cell policing.The SCR conformance test is performed only at the start of a frame. If the first cell of a frame is a conforming CLP=0 cell, then all remaining cells will be as if they are conforming to the SCR conformance test.

The SCR conformance test can be programmed to tag non-conforming CLP=0 cells. If the first cell of a frame is a non-conforming CLP=0, then that cell and all other cells in that frame (including the EOM) will be tagged. In other words, the tagged action taken by this conformance test is determined at frame boundaries only. If the SCR conformance test is programmed to discard, the policer can discard at any point in the frame and is not restricted by frame boundaries.

Local-Only Parameters

The parameters CDVT, stats enable, (specified using **-cdvt**, **-stat**) are significant only at the endpoint where you enter them. Therefore, they can be different at each end of the connection. Note that the *cc* parameter must be enabled at both ends or disabled at both ends.

Interoperability With Other Switches

Cisco MGX 8850 PXM1E-based and PXM45-based switches support interoperability with nodes manufactured by other vendors or Cisco ATM WAN switches other than the MGX and BPX families of switches. The other Cisco devices include the LS 1010 switch, DSLAMs such as the Cisco 6160 and Cisco 6250 products, and feeder nodes.

The mechanism that supports this interoperability is the single-ended provisioning of a connection. With single-ended provisioning, you specify both endpoints at the master endpoint only, and the slave endpoint is called a *non persistent slave endpoint*.

In single-ended provisioning, the slave endpoint is not actually provisioned on the far-end service module. The slave endpoint exists only on the PNNI controller on the local node. The slave endpoint is cleared when the connection is derouted by either the **dncon** command or the **clrspvcnonpers** command (the **delcon** command does not apply to nonpersistent endpoints).

Specifying a Single-ended Connection

A single-ended connection can be added only through the **addcon** command. CWM currently does not support addition of single-ended connections but only shows these connections.

The single-ended connection is specified at the master endpoint only. The specific **addcon** parameters that create a single-ended connection are as follows:

- *mastership* is 1 (for master endpoint).
- **-slave** is followed by the NSAP address of the slave endpoint, which consists of the nodal SPVC prefix, the port ID, the VPI, and the VCI.
- -**slavepersflag** is followed by “1” to indicate a non-persistent slave endpoint.

When you add a dual-ended connection, command entry for the slave endpoint automatically returns the connection identifier for the slave endpoint. For single-ended connections, you must already have the connection identifier for the non-persistent, slave endpoint. How you get the slave endpoint ID depends on the vendor of the switch, as follows:

- For a Cisco MGX 8800-series or MGX 8900-series switch, use the **dspspvcprfx** command at the slave-end switch to get the SPVC prefix for the node. Concatenate this prefix to the port ID, VPI, and VCI to form the total endpoint address.
- For other Cisco ATM WAN switches, such as the LS 1010 switch, use whatever means that switch supports for obtaining the endpoint ID.
- For non-Cisco ATM WAN switches, check the manufacturer’s documentation or confer with the network administrator regarding how to obtain the endpoint information.

To delete a single-ended connection, use the **delcon** command at the master endpoint. To de-route a single-ended connection, use the **clrspvcnonpers** command at the slave endpoint.

Overriding a Slave-end SVC or SVP

A routed SVC may have a VPI and VCI at the slave-end port that is needed by an incoming, single-ended connection. Because an existing SVC can take the next available VPI/VCI on the port, you can enable an override of the VPI/VCI. To override an SVC or SVP use the **cnfsvcoverride** command.

Limits

The following limitations apply to single-ended connections.

- Continuity checking (**-cc** option in the **addcon** command) is not supported.
- AIS is generated at both ends of the connection. However, at the slave endpoint, AIS is visible only through node-level CLI commands. For example, AIS is not reported to CWM.Termination of a single-ended connection is supported on most platforms except the following:
  - Feeder nodes
  - Legacy cards
- You can use the **tstdelay** command at the master endpoint only.

Characteristics Multicast Operation

Point-to-multipoint (P2MP) connections are added at the master endpoint only. You do not specify an NSAP in this case. After the connection has been added, you can add multiple *parties* by using the **addparty** command on the PXM on the source node. In the **addparty** command, you can provide an NSAP for the remote endpoint (the party). The nature of P2MP connections significantly affects the connection services that are available to these connections. This section describes these effects.

- Remote endpoints are always non-persistent. Because multicasting involves more than one endpoint, non-persistent P2P connections cannot override P2MP connections even if the override option has been enabled for the interface through the **cnfpnportcc** command.
- P2MP connections are considered for route optimization (or grooming) based on *branching*. Thus, PNNI skips P2MP grooming when you use either the **optrte**, **cnfrteopt**, or **cnfrteopt** command. Use **rrtcon** to trigger P2MP re-routing. (This branching criterion differs from that of P2P connection grooming. which is based on the sum of administrative weights along prospective routes.)
- P2MP connections are excluded from the Preferred Route feature. The system blocks any attempt to assign a preferred route to a P2MP connection.
- For the Priority Routing feature, P2MP connections have the default priority of 8. Cisco suggests that you not change routing priority for any P2MP connection even though the system lets you do it.
- When PNNI de-routes multiple connections, P2MP connections have the lowest de-routing priority.
- The default, connection-based percent utilization is 100 and is to be used for P2MP connections. The system ignores any attempt to configure a percent utilization for P2MP connections.If the port where you add a P2MP connection does not support egress multicast, subsequent addition of a party is rejected because the port cannot support branches on that port.
- Throughout the duration of a P2MP call, if the port-level *subscription option* (specified through **cnfpnportcc)** originally was disabled, then enabled, and again disabled, the parties become unequally distributed on that port. The following scenario illustrates this behavior:
  - Port 1:1.1:1 currently has one leaf with one party, and the subscription option is disabled.
  - Subscription option is enabled through the **cnfpnportcc** command.
  - Subsequent ADDPARTY message creates a leaf. This action results in two leafs (with one party each) on that P2MP connection on port 1:1.1:1.
  - Subscription option is again disabled.
  - A subsequent ADDPARTY does not create a leaf although the ADDPARTY is sent. However, the parties are not equally distributed among the two leaves. Suppose three ADDPARTYs go to port 1:1.1:1 on that call: all three parties are added to one leaf. The result is one leaf with four parties and one leaf with just one party.

- The following devices can terminate the far endpoint (the “party”):
  - AXSM-XG
  - AXSM-E
  - SES/BPX
  - PXM1E network interface

OAM and Failure Management

OAM functionality is not supported for P2MP connections (OAM needs two way communication of OAM cells). Further, the following functionality is not supported on P2MP connections:

- Continuity check (CC, configured through the **addcon** command for P2MP connections)
- **tstdelay** operation
- AIS propagation in case of UNI port failure

At the P2MP root, the following functionality is supported:

- **tstconseg** operation
- Segment OAM endpoint
- AIS upon connection failure, such as a failure to route or connection down by **dncon** usage

Syntax (AXSM)

```
addcon ifNum vpi vci serviceType mastership
      [-casttype <value>]
      [-slave <value>]
      [-lpcr  <local -> remote PCR>]    [-rpcr  <remote -> local PCR>]
      [-lscr  <local -> remote SCR>]    [-rscr  <remote -> local SCR>]
      [-lmbs  <local -> remote MBS>]    [-rmbs  <remote -> local MBS>]
      [-lcdv  <local -> remote maxCDV>] [-rcdv  <remote -> local maxCDV>]
      [-lctd  <local -> remote maxCTD>] [-rctd  <remote -> local maxCTD>]
      [-lmcr  <local -> remote MCR>]    [-rmcr  <remote -> local MCR>]
      [-cdvt  <local CDVT>] [-cc <OAM CC Cnfg>] [-stat <Stats Cnfg>]
      [-frame <frame discard>] [-mc <Max Cost>]
      [-lputil <local -> remote PUtil>]
      [-rputil <remote -> local PUtil>]
      [-slavepersflag <slavepers>]
      [-rtngprio <routingPriority>]
      [-prefrte <preferredRouteId>]
      [-intvsvd <internal vsvd config>]
      [-extvsvd <external vsvd config>]
      [-directrte <directRoute>]
```

Note To specify an OAM segment endpoint, use the **cnfcon** command after you have created the connection by using the **addcon** command. The **cnfcon** parameter is **-segep**.

Syntax Description

For the applicable parameters, the “local” end is the point at which you are provisioning the connection.

ifNum	The logical interface (or port) number. This *ifNum* corresponds to the *ifNum* added through the addport command. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126 When you add an endpoint on an NNI, make sure that PNNI signaling is disabled on the PXM45 (**cnfpnportsig** <*portid*> -**nniver none**).
vpi	Virtual path identifier. Possible values are: • UNI: 0–255 • NNI or VNNI: 0–4095; For VNNI, also specify one VPI per port.
vci	Virtual connection identifier (VCI) for a VCC. Possible values are: • If UNI, VCI can be 1–4095 • If NNI or VNN, VCI can be 1–65535 • If MPLS, recommended minimum VCI is 35 Virtual connection identifier (VCI) for a VPC. Possible values are: • VCI = 0 **Note** VPC with VPI=0 provisioning is supported only on AXSM/E card.
service type	Value in the range 1–12 to specify the service type: • 1 = CBR1 (Constant Bit Rate 1) • 2 = VBR1RT (Variable Bit Rate 1, Real Time) • 3 = VBR2RT (Variable Bit Rate 2, Real Time) • 4 = VBR3RT (Variable Bit Rate 3, Real Time) • 5 = VBR1NRT (Variable Bit Rate 1, Non-Real Time) • 6 = VBR2NRT (Variable Bit Rate 2, Non-Real Time) • 7 = VBR3NRT (Variable Bit Rate 3, Non-Real Time) • 8 = UBR1 (Unspecified Bit Rate 1) • 9 = UBR2 (Unspecified Bit Rate 2) • 10 = ABRSTD (Standard ABR—see **cnfabr** for VS/VD-specific parameters) • 11 = CBR2 (Constant Bit Rate 2) • 12 = CBR3 (Constant Bit Rate 3) **Note** CBR2 and CBR3 will be obsoleted in the future. Use CBR1 instead. **Note** The **cnfabr** command is not available on AXSM/A and AXSM/B cards.
mastership	Value to specify the endpoint as master or slave. Possible values are: • 1 = master end • 2 = slave end

-casttype	The broadcast type is either point-to-point or point-to-multipoint, as follows: • 0 = point-to-point (P2P). This is the default. • 1 = point-to-multipoint. P2MP connections are single-ended, so you add only the master endpoint. Thereafter, you can add parties through the **addparty** command.
-slave	The slave-end connection identifier is an item you enter at the *master* end, in the following format: *nsap_address.vpi.vci* For a *dual-ended* connection, you get the slave-end connection ID at the slave-end node when you add that endpoint. This keyword is mandatory when you are adding a *master* endpoint (*mastership*=1).
-lpcr	Local peak cell rate (PCR). Specifies the PCR from a local endpoint to a remote endpoint. PCR is the maximum cell rate for the connection at any time. Possible values are based on the connection, as follows: • OC192 = 7–22605280 cells per second • OC48 = 7–5651320 cells per second • OC12 = 7–1412830 cells per second • OC3 = 7–353207 cells per second • T3 = 7–96000(PLCP), 104268(ADM) cells per second • E3 = 7–80000 cells per second • T1 = 7–3622 cells per second • E1 = 7–4528 cells per second
-rpcr	Remote PCR. Specifies the PCR from a remote endpoint to a local endpoint. PCR is the maximum cell rate for the connection at any time. See values in **-lpcr** definition.
-lscr	Local sustained cell rate (SCR). Specifies the SCR from a local endpoint to a remote endpoint . SCR is the maximum cell rate that a connection can sustain for long periods. Possible values are based on the connection, as follows: • OC192 = 7–22605280 cells per second • OC48 = 7–5651320 cells per second • OC12 = 7–1412830 cells per second • OC3 = 7–353207 cells per second • T3 = 7–96000(PLCP),104268(ADM) cells per second • E3 = 7–80000 cells per second • T1 = 7–3622 cells per second • E1 = 7–4528 cells per second
-rscr	Remote SCR. Specifies the SCR from a remote endpoint to a local endpoint. SCR is the maximum cell rate that a connection can sustain for long periods. See values in **-lscr** definition.
-lmbs	Local maximum burst size (MBS). Specifies the MBS from a local endpoint to a remote endpoint (1–5000000 cells). MBS is the maximum number of cells that can burst at the PCR and still be compliant.
-rmbs	Remote MBS. Specifies the MBS from a remote endpoint to a local endpoint (1–5000000 cells). MBS is the maximum number of cells that can burst at the PCR and still be compliant.

-lcdv	The local cell delay variation (CDV) parameter specifies the peak to peak cell delay variation from the local endpoint to the remote endpoint. The range is 1–16777215 microseconds.
-rcdv	The remote CDV parameter specifies the peak to peak cell delay variation from the remote endpoint to the local endpoint. The range is 1–16777215 microseconds. Default is –1
-lctd	Local cell transfer delay (CTD). This parameter specifies the CTD from a local endpoint to a remote endpoint. The range is 0–65535 microseconds.
-rctd	Remote CTD. This parameter specifies the CTD from the remote endpoint to the local endpoint. The range is 0–65535 microseconds. Default is –1
-lmcr	Local Minimum Cell Rate (MCR). The committed minimum cell rate for a connection in the network from the local endpoint to the remote endpoint. Possible values are based on the connection, as follows: • OC192 = 7–22605280 cells per second • OC48 = 7–5651320 cells per second • OC12 = 7–1412830 cells per second • OC3 = 7–353207 cells per second • T3 = 7–96000(PLCP),104268(ADM) cells per second • E3 = 7–80000 cells per second • T1 = 7–3622 cells per second • E1 = 7–4528 cells per second
-rmcr	Remote MCR. The committed minimum cell rate for a connection in the network from the remote endpoint to the local endpoint. See values in **-lmcr** definition.
-cdvt	Local cell delay variation tolerance (CDVT). Specifies the CDVT from a local endpoint to a remote endpoint (1–5000000 microseconds). Cell Delay Variation Tolerance controls the time scale over which the PCR is policed. Note that no *remote* CDVT is necessary.
-cc	Operations, administration, and maintenance continuity check (OAM CC). Possible values are: • 1 = enable • 0 = disable Continuity checking involves a round trip of an OAM cell simply to confirm that both directions of the connection are intact. To provision continuity checking, enable this function at both ends of the connection, otherwise a connection alarm results. When you add a connection and include this parameter, the connection goes into alarm until both ends of the connection are added. Note that a non-zero AIS delay timer affects CC functionality (if enabled) during the intentional re-routing of a connection following the **optrte** or **cnfrteopt** command. (See the **cnfaisdelaytimer** description for details of this AIS-delay feature.) If the delay timer is configured and the connection is groomed, the switch turns of CC until the connection is re-routed. Default is 0.

-stat	Statistics collection. Possible values are: • 1 = enable • 0 = disable. This is the default. The Cisco WAN Manager tool collects statistics for a connection if you enable it here. Statistics collection is disabled for all connections by default. Statistics collection has an impact (which may not be significant) on the real-time response, especially for SVCs (which can be affected even though you do not add SVCs). Therefore, you should enable statistics collection for only the subset of connections that really warrants such a feature. **Note** This option applies to AXSM/A and AXSM/B cards only. The AXSM-E and AXSM-XG cards ignore the **-stat** option, as statistics collection is automatically enabled on these cards until the max level supported for a specific statistics configuration is reached.
-frame	This optional parameter lets you enable or disable frame discard for the connection. Note that you can use it at only the master endpoint of a connection. Possible values are: • 1 = enable • 0 = disable. This is the default.

-mc	Maximum cost (*maxcost*): a value that creates a priority for the connection route. The switch can select a route if the cost does not exceed *maxcost*. The range for *maxcost* is 0–4294967295. If you do not specify *maxcost*, the connection has the highest routing priority by default. Therefore, the *maxcost* parameter lets you lower the routing priority of a connection. Note the following effects of values in the maxcost range: • To assign the highest priority to an SPVC based on cost (any path is acceptable), use the default of 4294967295. If you do not specify maxcost, the cost appears as a –1 in the **dspcon** output. (You cannot enter a –1 for *maxcost* in the **addcon** command, but display commands generally can show unspecified values as –1.). • Enter a 0 for *optimal* (or least expensive) path. • For any non-zero *maxcost*, PNNI allows a path if the total cost for all links does not exceed *maxcost*. Although maxcost applies to an individual connection, routing costs substantially depend on a cost-per-link that you specify at every PNNI logical port in the network. The applicable PNNI command is **cnfpnni-intf**. The cost of a route is as follows: *routing cost = sum of all costs-per-link* where: • The cost-per-link has been specified through **cnfpnni-intf** at the egress of each logical port under PNNI control throughout the network. The impact of cost-per-link is cumulative, not just local. • Each link has two egress points: one going to the far endpoint, and one in the return direction. The cost-per-link can differ in each direction, so the switch adds the cost-per-link in each egress instead multiplying cost by two. The cost-per-link applies to all connections of a particular service type on a port. For example, the cost-per-link is the same for all VBR.1 connections that PNNI controls on a port, and this cost can differ from all UBR.1 connections on the same port. Alternatively, you can use **cnfpnni-intf** to make the cost-per-link the same for all service types. To illustrate by examining a four-link route: 1. You specify a *maxcost* of 100000. 2. A route under consideration has four links for a total of eight egress points. 3. The cost-per-link at 6 ports is 5040 (the default) and 10000 at 2 ports. The route is usable because the cost of 50240 is less than the maxcost of 100000. Default: 4294967295 The default makes *maxcost* meaningless for the connection, so PNNI does not use it as a routing metric. **Note** To return *maxcost* to the default, use the **cnfcon** command with the parameter **-mc 4294967295**.
-lputil	Local Percentage Utilization. Range 1-100. The default is 100.
-rputil	Remote Percentage Utilization. Range 1-100. The default is100.

-slavepersflag	The slave endpoint persistency flag is necessary for setting up a single-ended connection. For details, see the "Interoperability With Other Switches" section on page 5-13. Possible values are: • 0 = persistent. • 1 = non-persistent. This is the default.
-rtngprio	You can modify the priority of this connection. The range is 1–15. Default is 8.
-prefrte	This option associates a preferred route to the connection. Use this optional parameter at the master endpoint only. Be sure the route exists before you associate it with the connection because the system does not check it. Use the **dspprefs** command as needed. See the **addpref** description for details on preferred routes. To *disassociate* a connection from a route, assign a value of 0 for the **-prefrte** parameter through the **cnfcon** command. Range is 0–65535. Default is 0. **Note** Before you delete the route, be sure that all connections are disassociated from the route, otherwise a dangling preferred route path results. Use the following command to see all connections associated with a route. **dspcons** [**-rteid** <*pref rte id*>] **Note** An SPVC can be associated with one preferred route. For an XPVC, you can associate the preferred route with only the SPVC portion of the XPVC.
-intvsvd	Internal virtual source virtual direction (VSVD) configuration. Possible values are: • 1 = Off • 2 = On • 3 = Unspecified
-extvsvd	External VSVD configuration. Possible values are: • 1 = Off • 2 = On • 3 = Unspecified
-directrte	This parameter specifies that the connection can take only the preferred route associated through the **-prefrte** parameter. Use this optional parameter at the master endpoint only. To remove this requirement from the connection, use the **cnfcon** command and specify a 0 for this parameter. The possible values are as follows: • 1 = yes (make the preferred route required) • 0 = no (do not require the connection to take the preferred route). This is the default.

Error Messages

The system can display error messages for the following reasons:

- Some of the traffic management parameters apply to specific service types (rt-VBR, for example). If you type a parameter that does not apply to a selected traffic type, the connection is rejected.
- Insufficient resources are available to accept the provisioning request.

- The type of card does not support a certain feature.
- The port cannot support SPVCs.

One of the following error messages appears if one of the preceding causes is true:

- "Port does not support requested service Type"
- "lscr/lmcr not allowed to exceed lpcr (dcmp)"
- "rscr not allowed to exceed rpcr"
- "lpcr must be defined for cbr service Type"
- "rpcr must be defined for cbr serviceType"
- "lpcr and lscr must be defined for vbr service Type"
- "rpcr and rscr must be defined for vbr service Type"
- "lpcr must be defined for abr/ubr service Type"
- "rpcr must be defined for abr/ubr service Type"
- "Requested rcdv is too low"
- "Requested rctd is too low"
- "Requested max cell loss ratio (clr) is too high"
- "Requested cell rate (lscr/lpcr) is too high"
- "Requested cell rate (rscr/rpcr) is too high"

Related Commands

cnfcon, **cnfabr**, **delcon**, **dspcon**, **dspcons**, **dncon**, **upcon**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Add the slave end of a VCC on logical port 1 with VPI = 10, VCI = 40, CBR service type. Note that the system returns the slave end connection identifier in the hexadecimal NSAP format with the VPI.VCI at the end. When you add the master endpoint of the connection, type –slave followed by this connection identifier. You can do a copy and paste rather than typing the whole string.

```
MGX8850.AXSM.a >addcon 1 10 40 1 s
slave endpoint added successfully
slave endpoint id: 00000E1000001C008051B730FFFFFF010B180100.10.40
```

In the following two examples, the connection works with default values of PCR, SCT, MCR taken from the SCT. Defaults applied for the connection can be viewed by using the **dspcon** command.

```
MGX8850.1.11.AXSME.a > addcon 1 10 40 1 s
slave endpoint added successfully
slave endpoint id : 00000E1000001C008051B730FFFFFF010B180100.10.40

MGX8850.1.11.AXSME.a > addcon 1 10 50 1 m -slave
00000E1000001C008051B730FFFFFF010B180100.10.40
master endpoint added successfully
master endpoint id : 00000E1000001C008051B730FFFFFF010B180100.10.50
```

In the following two examples, the connection works with default values of SCR, MCR derived from the PCR value specified using lpcr and rpcr keywords. Defaults applied for the connection can be viewed by using the **dspchan** command.

```
MGX8850.1.11.AXSME.a > addcon 1 10 40 1 s
slave endpoint added successfully
slave endpoint id : 00000E1000001C008051B730FFFFFF010B180100.10.40

MGX8850.1.11.AXSME.a > addcon 1 10 50 1 m -slave
00000E1000001C008051B730FFFFFF010B180100.10.40 -lpcr 1000 -rpcr 1000
master endpoint added successfully
master endpoint id : 00000E1000001C008051B730FFFFFF010B180100.10.50
```

addfdr

Add Feeder—AXSM, AXSM-E, AXSM-XG

Adds a feeder node connection to the specified port (*ifNum*). The interface numbers of active ports are displayed in the **dspports** command report. LMI is up by default when you use **addfdr**.

Note This command is unsupported on a Cisco MGX 8950 switch.

When adding a feeder node, the following conditions apply:

- You can add a feeder node only to an already existing port (*ifNum*).
- You cannot add a feeder node to a port that already has a connection established on it.
- You cannot add a feeder node to a port with ILMI enabled.
- You cannot enable ILMI on a port that has a feeder node connection on it.

For more detailed information on configuring a feeder, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Syntax

addfdr <*ifNum*>

Syntax Description

ifNum	The interface number of the port to which the feeder node connection will be added. The interface numbers of active ports are displayed in the **dspports** command report. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126

Related Commands

delfdr, dspfdr, dspfdrs

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.1.AXSM.a > addfdr 1
```

addimagrp

Add IMA Group—AXSM-32-T1E1-E

Creates and configures a new IMA Group.

Syntax

addimagrp <*group*> <*version*> <*minLinks*> <*txImaId*> <*txFrameLen*> <*txclkMode*> <*diffDelayMax*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.3
version	The version number of ATM Forum IMA specification. 1 = ver1.0 2 = ver1.1
minLinks	The minimum number of links that will allow the IMA group to be operational (Range: 1–16).
txImaId	The IMA ID number transmitted in the IMA ID field of the ICP cell (Range: 0–255).
txFrameLen	The length of transmitted IMA frame in megabytes. For IMA version 1.0, the *txImaFrameLength* value is always 128. For version 1.1, the *txImaFrameLength* value can be 32, 64, 128, or 256.
txclkMode	The NE Transmit Clock mode: 1 = CTC 2 = ITC
diffDelayMax	The maximum differential delay in milliseconds. Ranges: T1 : 1–275 ms E1 : 1–220 ms

Related Commands

delimagrp, dspimagrp, dspimagrps, cnfimagrp, rstimagrp, dspimalnk, rstrtimagrp and dspimalnks

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
This example adds an IMA group with the following values:
```

Parameter	group	version	minLinks	txImaId	txFrameLen	txclkMode	diffDelayMax
Value	1.3	2	4	3	64	1	275

```
MGX8850.11.AXSME.a > addimagrp 1.3 2 4 3 64 1 275

MGX8850.11.AXSME.a >
```

addimalnk

Add IMA Link—AXSM-32-T1E1-E

This command adds an IMA *link* to an IMA *group*.

Note All IMA links that belong to the same group must be from the same bay.

Syntax

addimalnk <*link*> <*group*>

Syntax Description

link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.3
group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.2

Related Commands

dspimagrp, cnfimagrp, rstimagrp, dspimalnk, delimalnk

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.11.AXSME.a > addimalnk 1.3 1.2

MGX8850.11.AXSME.a >
```

addimaport

Add IMA Port—AXSM-32-T1E1-E

Creates and configures a new IMA virtual interface (*ifnum*) for the specified IMA *group*.

Setting the Correct Port SCT

For common IMA applications where the IMA group has 1–4 links, use SCT 54 (policing) or SCT 55 (non-policing). The maximum VC/CoSB cell threshold setting (in microseconds) is the same for both of these SCTs.

For IMA applications where the IMA group has 5–16 links, use the Cisco WAN Manager to create a new SCT and change the maximum VC/CoSB cell threshold (in microseconds). See the "Service Class Template Manager" chapter in the Cisco WAN Manager User's Guide for information how to create a new SCT.

- For IMA groups with 5–8 links, set the maximum VC/CoSB cell threshold value (in microseconds) to one quarter (1/4) of the maximum VC/CoSB cell threshold value defined in SCT 52 or SCT 53.

Note SCT 52 (policing) or SCT 53 (no policing) are used for non-IMA T1/E1 applications.

- For IMA groups with 9–16 links, set the maximum VC/CoSB cell threshold value (in microseconds) to one eighth (1/8) of the maximum VC/CoSB cell threshold value defined in SCT 52 or SCT 53.

For this new SCT, the other types of thresholds, such as CLP_HI/LO, can be defined as a certain percentage of the maximum VC/CoSB cell threshold (in microseconds). Refer to SCT 52 or SCT 53 for the default percentage of each type of threshold.

Syntax

addimaport <*ifNum*> <*group*> <*guaranteedRate*> <*maxRate*> <*sctID*> <*ifType*> [**-vpi** vpi] [**-minvpi** *minvpi*] [**-maxvpi** *maxvpi*]

Syntax Description

ifNum	The logical port number. Range:1–32
group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16
guaranteedRate	The guaranteed minimum bandwidth rate in cells per second. Range for T1: between 50 and N * (3622 * (M-1)/M * 2048/2049) Range for E1: between 50 and N * (4528 * (M-1)/M * 2048/2049) N = the number of IMA links in the IMA group M = the IMA group frame length

maxRate	The maximum bandwidth rate in cells per second. Range for T1: between 50 and N * (3622 * (M-1)/M * 2048/2049) Range for E1: between 50 and N * (4528 * (M-1)/M * 2048/2049) N = the number of IMA links in the IMA group M = the IMA group frame length
sctID	The ID number of the port SCT file on the PXM disk. Range: 0–255. For IMA, use SCT 54 (policing) or SCT 55 (non-policing). See the “Setting the Correct Port SCT” section in the **addimaport** main description.
ifType	Specifies the port as one of the following types of interfaces: 1 = UNI (User-to-Network Interface) 2 = NNI (Network-to-Network Interface) 3 = VNNI (Virtual Network-to-Network Interface) 4 = VUNI (Virtual User-to-Network Interface) 5 = EVUNI (Enhanced Virtual User-to-Network Interface) 6 = EVNNI (Enhanced Virtual Network-to-Network Interface) EVNNI and EVUNI allow you to specify a range of VPIs for a single interface, and this range of VPIs represents the virtual NNI or virtual UNI trunk. VNNI and VUNI allow you to specify only one VPI for a single interface, and that VPI represents the virtual NNI or virtual UNI trunk. Multiple VNNIs and EVNNIs can coexist on the same line.
-vpi <vpi>	The Virtual Path Identifier (VPI), which is used in this case to configure the interface as a virtual trunk. Ranges: 1–255 VUNI 1– 4095 VNNI
-minvpi <*minvpi*>	The minimum VPI. Ranges: • 0–255 EVUNI • 0–4095 for EVNNI
-maxvpi <*maxvpi*>	The maximum VPI. Ranges: • 0–255 EVUNI • 0–4095 for EVNNI

Related Commands

dspport, dspports, delport, cnfport

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

This example adds a port on an IMA group with the following values:

Parameter	ifNum	group	guaranteedRate	maxRate	sctID	ifType
Value	32	2.16	10000	10000	54	2

```
MGX8850.2.AXSME.a> addimaport 32 2.16 10000 10000 54 2

MGX8850.2.AXSME.a>
```

addlmi

Add Local Management Interface—AXSM, AXSM-XG

The **addlmi** command allows you add extended LMI (XLMI) so that an AXSM logical interface can support one of the following items:

- A feeder (Cisco MGX 8850 PXM1-based switch)
- A Service Expansion Shelf (SES)

Note By using the **addlmi** command to add LMI for a feeder shelf, the **addfdr** command is unnecessary.

Usage Guidelines

Note the following properties and behaviors before you use the **addlmi** command:

- For the feeder application of the **addlmi** command, the effect is the same as using **addfdr**, so you do not need to use **addfdr** for a logical port in addition to **addlmi**.
- No other ILMI or LMI configuration can exist on the AXSM logical interface.
- No connections can exist on the AXSM logical interface.
- A combined maximum of 16 feeder lines or SES interoperability ports can exist on the switch.
- When a port is configured for an XMLI link with an SES, IP connectivity must be disabled.
- The XLMI timers are not configurable on the AXSM. Timer configuration is done on the SES. The values for the LMI timers on AXSM are:
  - SPVC Status Enquiry Timer: 10 seconds
  - SPVC Update Status Timer: 10 seconds
  - Retry Timers: 5 seconds

Syntax

addlmi <*ifNum*> <*type*>

Syntax Description

ifNum	The logical interface number. Range: 1–60.
type	The LMI type refers to either feeder support or interoperability with a BPX 8600-type switch. 1–feeder 2–XLMI to support interoperability with SES

Related Command

dellmi, **uplmi**, **dnlmi**, **uplmi**, **clrlmistat**, **dsplmi**, **dsplmis**, **dsplmistat**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Add a LMI for a feeder to AXSM port 2. Check the resulting LMI.

```
MGX8850.1.AXSM.a > addlmi 2 1
MGX8850.1.AXSM.a > dsplmi 2
  LMI Interface Number        : 2
  LMI Remote Name             : MGX8850
  LMI IP Address              : 10.10.10.56
  LMI Remote Shelf            : 1
  LMI Remote Slot             : 1
  LMI Remote Port             : 1
  LMI Type                    : AXSM
  LMI Model Number            : 8850
  LMI Configuration           : Up
  LMI Link Status             : Up
  LMI Alarms                  : Clear
```

addlnloop

Add Line Loop—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

Specifies a loopback state for a line on the current card.

On AXSM, AXSM-E and AXSM-XG and you must first delete the loopback by executing **dellnloop** or **addlnloop** with the no loopback mode specified before you can change the loopback type of an existing loopback.

On AXSM-32-T1E1-E you can change the loopback type without deleting the existing loopback.

Syntax (AXSM)

addlnloop <**-ds3** | **-sonet** *bay.line*> <**-lpb** *loopback type*>

Note For AXSM cards, the keyword **ds3** applies to both T3 and E3 line types.

Syntax Description (AXSM)

bay.line	Identifies the bay (1 or 2) and the line number. The line number is 1 to the highest numbered line on the back card.
-lpb	Specifies the loopback type for the line type. The entry for no loopback (1) removes any existing loopback. 1 = No loopback 2 = Local loopback 3 = Remote loopback

Syntax (AXSM-E, AXSM-XG)

addlnloop < **-ds3** | **-e3** | **-sonet** | **-e1** <*bay.line*> <**-lpb** *loopback type*>

Syntax Description (AXSM-E, AXSM-XG)

-ds3 **-e3** **-sonet** **-e1**	Specifies a DS3, E3, T3 , SONET (OC-3c, OC-12c, OC-48c), or E1 line.
bay.line	Identifies the bay (1 or 2) and the line number. The line number is 1 to the highest numbered line on the back card.
-lpb	Specifies the loopback type for the line type. The entry for no loopback (1) removes any existing loopback. 1 = No loopback 2 = Local loopback 3 = Remote loopback

Syntax (AXSM-32-T1E1-E)

addlnloop **-ds3**<*bay.line*> **-lpb** <*loopback type*>

Syntax Description (AXSM-32-T1E1-E)

-ds3	The ds3 bay number (1–2) and line number (1–16). For example, for bay 1, line 16, enter: `-ds3 1.16`
-lpb	Specifies the type of loopback: 1 = NoLoop 2 = Local 3 = Remote

Attributes (AXSM-32-T1E1-E)

Log: yes	State: active, standby, init	Privilege: GROUP1

Attributes (AXSM, AXSM-E, AXSM-XG)

Log: yes	State: active	Privilege: GROUP1

Related Commands

dellnloop

Example

Adding a DS3 line in a loopback state.

```
MGX8850.1.11.AXSME.a > addlnloop -ds3 1.1 -lpb 2
```

addpart

Add Resource Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Add a resource partition. Before you add a partition, be sure you have a plan for future developments, such as the addition of a new controller.

Note The **addpart** and **addrscprtn** commands are identical.

A resource partition consists of:

- Guaranteed percentage of bandwidth.
- VPI and VCI ranges. For MPLS (or LSC), Cisco Systems recommends a minimum VCI of 35.
- Guaranteed minimum and maximum number of connections. The maximum number of connections must be greater than 10.

Before adding a resource partition, you must:

- Activate physical lines on the card (**upln** and optional **cnfln**).
- Add logical ports to the physical lines (**addport** and optional **cnfport**).
- Execute **addcontroller** on the PXM45 to identify the controller type to the Virtual Switch Interface (VSI) and give that controller an ID number. The **addpart** command takes this controller ID as an argument.

Note For VNNIs (virtual trunks), you can configure one VNNI per port and one port per partition. Specify the VNNI interface type through the **addport** command.

Important VPI/VCI Range Issues

When configuring a partition, be sure to configure the VPI/VCI ranges to meet your actual usage requirements. It is important that you do not configure the entire VPI/VCI range for a single partition. The ability to seamlessly add new partitions in the future depends on configuring only the necessary ranges for each partition.

The recommended ranges for a single partition are as follows:

- For a VPI on a UNI port where the available range is 0–255, the recommended configured range is 0–140.
- For a VPI on a PNNI port where the range is 0–4096, the recommended configured range is 0–2500 or about 60%.

Caution When adding or configuring a PNNI partition, do not configure the entire VPI/VCI range for one partition. In the future, if you migrate from a PNNI only service to a PNNI/MPLS service with multiple partitions, you will need the additional VPI/VCI ranges to be able to add a new partition. If you configure all of the available ranges for the PNNI partition, you will not be able to add a new MPLS partition without bringing down the port using the **dnport** command to change the PNNI VPI/VCI ranges. Bringing down a port on a live network is usually not an option.

AXSM-E, AXSM-XG Dependencies

A dependency exists between the **addcontroller** command on the PXM45 and the **addpart** (**addrscprtn)** command on the AXSM-E and AXSM-XG. Both commands take a controller ID (*ctrlr_id*) as an input. Both of these controller IDs must be the same when referring to the same VSI controller.

The sequence for executing these two commands should be as follows:

1. Run **addcontroller** on the PXM45 to specify the location of the VSI controller.
2. Run **addpart** (**addrscprtn)** on the AXSM-E or AXSM-XG to add resource partitions for the VSI controller.

To support legacy service modules and earlier implementations of VSI, only the following combinations of controller ID (*ctrlr_id*) values 1, 2, and 3 and controller type (*cntrlrType*) values are supported:

- controller ID value 1 and controller type value 1 (PAR)
- controller ID value 2 and controller type value 2 (PNNI)
- controller ID value 3 and controller type value 3 (MPLS)

For all other controller ID values, any combination of controller type is supported.

Note *cntrlrType* is an **addcontroller** parameter.

Syntax

addpart <*if_num*> <*part_id*> <*ctrlr_id*> <*egrminbw*> <*egrmaxbw*> <*ingminbw*> <*ingmaxbw*> <*min_vpi*> <*max_vpi*> <*min_vci*> <*max_vci*> <*minConns*> <*maxConns*>

Syntax Description

if_num	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
part_id	The partition ID number. The ranges are as follows: AXSM: 1–5 AXSM-E: 1–20
ctrlr_id	A number that identifies a network controller. The range for *reserved* controller IDs is 1–3 and is the same for all AXSM models. The reserved controller IDs are as follows: 1 = PAR (Portable AutoRoute)—currently not used 2 = PNNI 3 = LSC (Label Switch Controller, also known as MPLS for Multiprotocol Label Switch Controller) The absolute ranges for the AXSM and AXSM-E are as follows: • AXSM: 1–60 • AXSM-E: 1–32

egrminbw	A guaranteed percentage of egress bandwidth. Each unit of *egrminbw* is 0.000001 of the total bandwidth on the port. (An *egrMinBw* of 1000000 = 100%.) This approach provides a high level of granularity.
egrmaxbw	A maximum percentage of the bandwidth. Each unit of *egrmaxbw* is 0.000001 of the total bandwidth available to the port. (An *egrMaxBw* of 1000000 = 100%.) The resulting bandwidth must be at least 50 cps.
ingminbw	A guaranteed percentage of the ingress bandwidth. Each unit of *ingminbw* is 0.000001 of the total bandwidth available to a port. For example, an *ingMinBw* of 1000000 = 100%.
ingmaxbw	A maximum percentage of the ingress bandwidth. Each increment of *ingmaxbw* is 0.000001 of the total bandwidth on the port. For example, an *ingMaxBw* of 1000000 = 100%. Note that the maximum ingress bandwidth must be at least 50 cps.
min_vpi	Minimum VPI. For NNI, the range is 0–4095. For UNI, the range is 0–255.
max_vpi	Maximum VPI in the range 0–4095 for an NNI. For a UNI, the range is 0–255. The *maxvpi* cannot be less than the *minvpi.*
min_vci	Minimum VCI: AXSM range: 0–2000 (OC-48 only) or 1–65535
max_vci	Maximum VCI: AXSM range: 0–2000 (OC-48 only) or 32–65535
minConns	Guaranteed number of connections. The range is between 0 and the maximum number of connections in the port group. See **dspcd** for information about port groups. **Note** On UNI ports, 1% of the <*minConns*> value is reserved for signaling.
maxConns	A maximum number of connections. The range is between 10 and the maximum number of connections in the port group. See **dspcd** port group information. The value of *maxConns* cannot be less than the value of *minConns*.

Related Commands

cnfpart, **delpart**, **dspparts**, **dsppart**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Create a resource partition with the following parameters:

- Logical port 4 (already created by executing **addport**)
- Partition number 4
- Controller ID 2 (the reserved ID for PNNI)
- 10% of the bandwidth in the egress and ingress directions reserved for this partition
- The range for VPIs is 10–110, the range for VCIs is 100–2000
- Minimum guaranteed connections is 100, maximum number of connections is 500

```
MGX8850.3.AXSM.a > addpart 4 4 2 100000 100000 100000 100000 10 110 100 2000 100 500
```

Check the configuration with **dspparts** and **dsppart**.

```
MGX8850.3.AXSM.a > dspparts
if  part Ctlr egr     egr     ingr    ingr    min max   min   max  min   max
Num ID   ID   GuarBw  MaxBw   GuarBw  MaxBw   vpi vpi   vci   vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
----------------------------------------------------------------------------
 4   4    2  100000  100000  100000  100000   10  110   100  2000    100    500

MGX8850.3.AXSM.a > dsppart 4 4
  Interface Number              : 4
  Partition Id                  : 4        Number of SPVC: 0
  Controller Id                 : 2        Number of SPVP: 0
  egr Guaranteed bw(.0001percent): 100000   Number of SVC : 0
  egr Maximum bw(.0001percent)   : 100000
  ing Guaranteed bw(.0001percent): 100000
  ing Maximum bw(.0001percent)   : 100000
  min vpi                       : 10
  max vpi                       : 110
  min vci                       : 100
  max vci                       : 2000
  guaranteed connections        : 100
  maximum connections           : 500
```

addport

Add Port—AXSM, AXSM-E, AXSM-32-E, AXSM-XG

A logical port is associated with a physical line. For a UNI or NNI, a line can support one logical port. For a virtual NNI (VNNI), a line can support multiple logical ports.

The ranges of logical port numbers for each card is as specified in the Syntax Description and applies to UNI, NNI, VUNI, and VNNI. For example, if a card supports 4 lines and all lines support UNI, the card can have 4 logical ports whether their numbers are 1–4, 11–14, 57–60, and so on.

You can run the **addport** command only on an active line. See the description of the **upln** command.

Note The maximum number of logical ports for the entire node is 192, of which a maximum of 100 can be signalling ports. System planners need to keep track of how many signaling ports exist because these ports subtract from the total logical ports you can add.

Note If your are going to use card statistics on AXSM/A and AXSM/B cards, you must use **cnfcdstat** before you add logical ports with the **addport** command. You cannot configure card statistics once you have any logical ports added.

The information you specify with **addport** consists of the following items:

- Logical port number
- Bay number and line number
- Guaranteed rate and the maximum rate (currently the same for all interface types)
- Service class template (SCT) identifier for the port
- Type of interface (UNI, NNI, or VNNI)
- VPI for all connections on the port if the interface type is VNNI

The syntax is slightly different on the AXSM-XG than it is on the other AXSM cards. The AXSM-XG has a path number parameter (*path_num*) instead of a *bay.line* parameter. Refer to the Channelizing a Line section in the “Provisioning ATM Services” chapter of the is document for an explanation of channelization and paths.

Using the Correct SCT

The switch supports a template approach to specifying parameters—an approach that is appropriate for adding large numbers of connections. (You can customize an individual connection by modifying the *optional* parameters through the **addcon** or **cnfcon** command.) The name of such a template is *service class template* (SCT). These templates apply to the logical ports on the one hand and the card itself on the other. You must specify an SCT for each logical port added through the **addport** command, and you must specify an SCT for the card through the **cnfcdsct** command.

You can specify either the same or different SCTs for the port or card level. The system does not automatically assign an SCT to a *card* when you specify an SCT for a *port*. For example, if you specify SCT 2 for a port, the system does not assign SCT 2 to the card.

Cisco provides the following SCTs for the AXSM cards:

- For AXSM/A and AXSM/B, use SCT numbers 2, 3, 4, and 5.
- The AXSM-E and AXSM-XG requires SCT 4 or 5 (for ABR support) and cannot use SCT 2 or 3.

- For AXSM-32-T1-E1-E, use SCT 52 (policing) or SCT 53 (non-policing). The maximum VC/CoSB cell threshold setting is the same for both SCT 52 or SCT 53.

The high-level distinctions between SCTs 2, 3, 4, and 5 are as follows:

- SCT 2 contains policing parameters, but SCT 3 does not.
- SCT 4 contains policing parameters, but SCT 5 does not.
- If your network design includes eventual configuration of partitions for MPLS, you may need SCT 4 or 5 (or derivations of 4 or 5 that you create through Cisco WAN Manager).

Cisco Systems provides SCTs 2 and 3 with Release 2.0. Additionally, it provides SCTs 4 and 5 with Release 2.1 Cisco Systems encourages users who have upgraded from 2.0 to 2.1 to use SCT 4 or 5 for new card and port configurations. For example, if MPLS is implemented, SCT 4 or 5 may be required.

The following two types of tasks may be helpful before you assign SCTs:

- To see the actual values in an SCT, use **dspportsct** for a port SCT or **dspcdsct** for a card-level SCT.
- To see a list of SCT files on the disk, use **cd** to reach the SCT directory, then execute **ls** to display the contents of the AXSM directory. See the Example section for an illustration of this task.

You should use the provided SCTs or create new templates by using the Cisco WAN Manager application to modify the provided SCTs and saving them with new SCT numbers.

Until you specify an SCT, the AXSM has a default SCT of 0. The system uses SCT ID = 0 when:

- The AXSM is powered-up for the first time.
- The card's database is rebuilt.
- The card is rebooted and the user-specified SCT file for a particular port is corrupt or missing. In this situation, the default applies to only the affected port.

Syntax (AXSM, AXSM-E, AXSM-32-E)

addport <*ifNum*> <*bay.line*> <*guaranteedRate*> <*maxRate*> <*sctID*> <*ifType*> [**-vpi** *vpi*] [**-minvpi** *minvpi*] [**-maxvpi** *maxvpi*]

Syntax (AXSM-XG)

addport <*ifNum*> <*path_num*> <*guaranteedRate*> <*maxRate*> <*sctID*> <*ifType*> [**-vpi** *vpi*] [**-minvpi** *minvpi*] [**-maxvpi** *maxvpi*]

Note For all ports on all AXSM cards, *guaranteedRate* must be the same as *maxrate*.

Syntax Description

ifNum	A logical port (interface) number. Only one logical port is allowed if the line operates as a UNI or NNI. For a virtual network to network interface (VNNI or EVNNI), multiple ports can exist on a line. The ranges are: • AXSM: 1–60. • AXSM-E: 1–32. • AXSM-XG: 1–126
path_num (AXSM-XG only)	Identifies the channelized path to which you want to add a port. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.
bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
guaranteedRate	Guaranteed rate on a port in cells per second. For all interface types (UNI, NNI, VNNI, EVNNI, and EVUNI), *guaranteedRate* must be the same as *maxrate*. The total guaranteed rates cannot exceed the highest value in the following ranges: • OC48 = 50–5651320 cps • OC12 = 50–1412830 cps • OC3 = 50–353207 cps • T3 = 50–96000 cps for PLCP or 104268 cps for ADM • E3 = 50–80000 cps • T1 = 50–3622 • E1 = 50–4528
maxRate	Maximum rate on a logical port in cells/second. For all interface types (UNI, NNI, VNNI, EVNNI, and EVUNI), *guaranteedRate* must be the same as *maxrate*. The total maximum rates cannot exceed the highest value in the following ranges: • OC48 = 50–5651320 cps • OC12 = 50–1412830 cps • OC3 = 50–353207 cps • T3 = 50–96000 cps for PLCP or 104268 cps for ADM • E3 = 50–80000 cps • T1 = 50–3622 • E1 = 50–4528
sctID	The ID of a service class template (SCT) for the port. The range is 0–255. The SCT file must exist on the PXM45 disk. See **cnfcdsct**. **Note** Currently, the system does not support certain parameters in the service class templates (SCTs). These parameters are (when applicable) PCR, SCR, and ICR. You can specify them through **addcon**, **cnfcon**, or Cisco WAN Manager.

ifType	Specifies the port as one of the following types of interfaces: • 1 = UNI (User-to-Network Interface) • 2 = NNI (Network-to-Network Interface) • 3 = VNNI (Virtual Network-to-Network Interface) • 4 = VUNI (Virtual User-to-Network Interface) • 5 = EVUNI (Enhanced Virtual User-to-Network Interface) • 6 = EVNNI (Enhanced Virtual Network-to-Network Interface) EVNNI and EVUNI allow you to specify a range of VPIs for a single interface, and this range of VPIs represents the virtual NNI or virtual UNI trunk. VNNI and VUNI allow you to specify only one VPI for a single interface, and that VPI represents the virtual NNI or virtual UNI trunk. Multiple VNNIs and EVNNIs can coexist on the same line.
-vpi	Virtual Path Identifier: • UNI, Range = 1–4095 • NNI, Range = 1–4095 • VNNI, Range = 1–4095 • VUNI, Range = 1–255 • EVUNI, Range = 0–255 • EVNNI, Range = 0–4095
-minvpi	The minimum VPI: • 0 and 255 for EVUNI • 0 and 4095 for EVNNI
-maxvpi	The maximum VPI: • 0 and 255 for EVUNI • 0 and 4095 for EVNNI

Related Commands

cnfport, **delport**, **dspport**, **dspports**, **dspportsct**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

With port-level SCT 4 confirmed on the disk, create logical port 3 on line 3 of bay 1. The minimum and maximum cells per second must be the same—96000 cps in this example. The port SCT file ID is 4. The interface type is NNI—specified by the 2 at the end of the command input. Confirm the result.

```
MGX8850.6.AXSM.a > addport 3 1.3 96000 96000 4 2

MGX8850.6.AXSM.a > dspport 3
  Interface Number              : 3
  Line Number                   : 1.3
```

```
  Admin State                    : Up        Operational State   : Down
  Guaranteed bandwidth(cells/sec): 96000     Number of partitions: 0
  Maximum bandwidth(cells/sec)   : 96000     Number of SPVC      : 0
  ifType                         : NNI       Number of SPVP      : 0
  Port SCT Id                    : 4
  VPI number(VNNI only)          : 0         Number of SVC       : 0
```

To use addport on AXSM-XG, use *path_num* instead of *bay.line*. In this example *path_num* is 1.1.1.

```
MGX8950.5.AXSMXG.a >addport 1 1.1.1 1412830 1412830 23 1

MGX8950.5.AXSMXG.a > dspport 1
  Interface Number               : 1
  Line/path Number               : 1.1.1
  Admin State                    : Up        Operational State     : LowLayerDn
  Guaranteed bandwidth(cells/sec): 1412830   Number of partitions  : 1
  Maximum bandwidth(cells/sec)   : 1412830   Number of SPVC        : 2
  ifType                         : UNI       Number of SPVP        : 0
  VPI number (VNNI, VUNI)        : 0         Number of SVC         : 0
  MIN VPI (EVNNI, EVUNI)         : 0         MAX VPI (EVNNI, EVUNI): 0
  SCT Id                         : 23
  F4 to F5 Conversion            : Disabled
```

addrscprtn

Add Resource Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Add a logical partition of resources for a network controller on a port. Before you add resource partitions, be sure a plan exists for future developments, such as the addition of a new controller.

Note The **addpart** and **addrscprtn** commands are identical. Use the command name that suits you. The same identification applies to commands that display and delete a resource partition.

A resource partition consists of:

- Guaranteed percentage of bandwidth.
- VPI and VCI ranges. For MPLS (or LSC), Cisco Systems recommends a minimum VCI of 35.
- Guaranteed minimum and maximum number of connections.

Note The maximum number of connections must be greater than 10.

Before adding a resource partition, you must:

- Activate physical lines on the card (**upln** and optional **cnfln**).
- Add logical ports to the physical lines (**addport** and optional **cnfport**).
- Execute **addcontroller** on the PXM45 to identify a *controller type* to the Cisco Virtual Switch Interface (VSI) and give that controller an ID number. The **addrscprtn** command takes this controller ID as an argument.

The primary network control application is PNNI. Plan the partitioning for possible use of MPLS or other controllers in the future.

Note For VNNIs (virtual trunks), you can configure one VNNI per port and one port per partition. Specify the VNNI interface type through the **addport** command.

AXSM-E, AXSM-XG Dependencies

A dependency exists between the **addcontroller** command on the PXM45 and the **addpart** (**addrscprtn)** command on the AXSM-E and AXSM-XG. Both commands take a controller ID (*ctrlr_id*) as an input. Both of these controller IDs must be the same when referring to the same VSI controller.

The sequence for executing these two commands should be as follows:

1. Run **addcontroller** on the PXM45 to specify the location of the VSI controller.
2. Run **addpart** (**addrscprtn)** on the AXSM-E and AXSM-XG to add resource partitions for the VSI controller.

To support legacy service modules and earlier implementations of VSI, only the following combinations of controller ID (*ctrlr_id*) values 1, 2, and 3 and controller type (*cntrlrType*) values are supported:

- controller ID value 1 and controller type value 1 (PAR)
  (Controller type (*cntrlrType*) is an **addcontroller** parameter.)
- controller ID value 2 and controller type value 2 (PNNI)
- controller ID value 3 and controller type value 3 (MPLS)

For all other controller ID values, any combination of controller type is supported.

Syntax

addrscprtn *<if_num> <part_id> <ctrlr_id> <egrminbw> <egrmaxbw> <ingminbw> <ingmaxbw> <minVpi> <maxVpi> <minVci> <maxVci> <minConns maxConns>*

Note The maximum number of connections must be greater than 10.

Syntax Description

if_num	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
part_id	The partition ID number. The ranges are as follows: • AXSM: 1–5 • AXSM-E: 1–20
ctrlr_id	A number that identifies a network controller. The range for *reserved* controller IDs is 1–3 and is the same for all models. The reserved controller IDs are as follows: 1 = PAR (Portable AutoRoute)—currently not used 2 = PNNI 3 = LSC (Label Switch Controller, also known as MPLS for Multiprotocol Label Switch Controller) The theoretical ranges for the AXSM, AXSM-E and AXSM-XG are as follows: • AXSM: 1–20 • AXSM-E, AXSM-XG: 1–254
egrminbw	A guaranteed percentage of egress bandwidth. Each unit of *egrMinBw* is 0.00001 of the total bandwidth on the port. (An *egrMinBw* of 1000000 = 100%.) This approach provides a high level of granularity.
egrmaxbw	A maximum percentage of the bandwidth. Each unit of *egrMaxBw* is 0.00001 of the total bandwidth available to the port. (An *egrMaxBw* of 1000000 = 100%.) The resulting bandwidth must be at least 50 cps.
ingminbw	A guaranteed percentage of the ingress bandwidth. Each unit of *ingMinBw* is 0.00001 of the total bandwidth available to the port. For example, an *ingMinBw* of 1000000 = 100%.
ingmaxbw	A maximum percentage of the ingress bandwidth. Each increment of *ingMaxBw* is 0.00001 of the total bandwidth on the port. For example, an *ingMaxBw* of 1000000 = 100%. Note that the maximum ingress bandwidth must be at least 50 cps.
minVpi	Minimum VPI. For NNI, the range is 0–4095. For UNI, the range is 0–255. For a virtual trunk (VNNI interface type in the **addport** command), the *minVpi* must be the same as the *maxVpi*.
maxVpi	Maximum VPI in the range 0–4095 for an NNI. For a UNI, the range is 0–255. The *minVpi* cannot be less than the *maxVpi.*

minVci	Minimum VCI in the range 0–2000 (OC-48 only) or 32–65535.
maxVci	Maximum VCI in the range 0–2000 (OC-48 only) or 32–65535.
minConns	A guaranteed number of connections. The range is between 0 and the maximum number of connections in the port group. See **dspcd** for information about port groups. **Note** On UNI ports, 1% of the <*minConns*> value is reserved for signaling.
maxConns	A maximum number of connections. The range is between 0 and the maximum number of connections in the port group. See **dspcd** port group information. *maxConns* cannot be less than *minConns*.

Related Commands

cnfrscprtn, **delrscprtn**, **dsprscprtns**, **dsprscprtn**

Attributes

Log: yes	State: active	Privilege: GROUP1

bootchange

Boot Change—AXSM

Sets the boot IP address and gateway address of the PXM45 card. The boot IP address is used only when the PXM45 card boots up.

The only parameters you should enter are “inet on ethernet (e)” and “gateway inet (g).” The **bootchange** command presents one parameter at a time. Therefore, press the Return (or Enter) key at each prompt except for these two. The example in this description shows the two fields where you need to enter an IP address and the fields you skip.

Note The boot IP address does not get saved with **saveallcnf**.

Note Use the **ipifconfig** command to assign IP addresses for the PXM45 and the shelf.

Syntax

bootchange

Related Commands

none

Attributes

Log: yes	State: active	Privilege: SERVICE_GP

Example

```
MGX8850.1.AXSM.a > bootChange
'.' = clear field; '-' = go to previous field; ^D = quit
boot device : lnPci
processor number : 0
host name :
file name :
inet on ethernet (e) : 172.29.52.6
inet on backplane (b):
host inet (h) : 0.0.0.0
gateway inet (g) : 172.29.52.1
user (u) :
ftp password (pw) (blank = use rsh):
flags (f) : 0x0
target name (tn) : ??????????
startup script (s) :
other (o)
```

bye

Bye—AXSM, AXSM-E, AXSM-XG

Exit the current CLI session.

Syntax

bye

Related Commands

logout, **exit**

Attributes

Log: yes	State: active, standby, init	Privilege: ANYUSER

Example

Exit the current CLI shell.

```
MGX8850.8.AXSM.a > bye

(session ended)
```

cc

Change Card—AXSM

Use **cc** to change from the current CLI to the CLI of another card. Follow **cc** with a slot number.

Syntax

cc <*slot number*>

Syntax Description

slot number	The number of the destination card slot.

Related Commands

None

Attributes

Log: yes	State: active, standby, init	Privilege: ANYUSER

Example

Change from the command line of the AXSM in slot 12 to the command line of the PXM45 in slot 8.

```
MGX8850.12.AXSM.a > cc 8

(session redirected)

MGX8850.8.PXM.a >
```

Note If the slot is empty or the card is unreachable, the system displays an applicable message.

ccc

Change Card—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use c**cc** to change from the current CLI to the CLI of another card, and to display the priority of the current session. Follow **ccc** with a slot number.

Syntax

ccc <*slot number*>

Syntax Description

slot number	The number of the destination card slot.

Related Commands

None

Attributes

Log: yes	State: active	Privilege: CISCO_GP

Example

Change from the command line of the AXSM-E in slot 12 to the command line of the AXSM in slot 8.

```
M8850_LA.12.AXSME.a > ccc 1

(ccc session redirected)

M8850_LA.1.AXSM.a >
This is a high priority session.
```

Note If the slot is empty or the card is unreachable, the system displays an applicable message.

clidbxlevel

Command Line Interface Level—AXSM

The **clidbxlevel** command level one (1) causes the attributes of a command to be displayed when you use the **help** (**?**) command. The displayed attributes are log, state, and privilege. You must re-execute this command for it to take effect when you change to a new card.

The **help** (**?**) command output display, when **clidbxlevel** one (1) is in effect, is described in Table 5-14.

Table 5-14 clidbxlevel 1 help Output Display Descriptions

Headings	Command	Access	Card	Log
Example	adduser	GROUP1	A	+
Description	The name of the command.	The user privilege level required to execute the command.	The state of the card required to execute the command: a–active s–standby i–initialized	Whether the command is logged or not: + yes – no

Syntax

clidbxlevel [*level*]

Syntax Description

level	The level can be 0–3. If you do not include a level, the system displays the current level. Level one (1) causes the command attributes to be displayed when you use the help command.

Related Commands

None

Attributes

Log: no	State: active, standby, init	Privilege: SERVICE_GP

Example

In this example, the **clidbxlevel** is set to one (1) and the **help** (**?**) command is used on the wildcard string "user". All commands that contain the string "user" are display with their attributes.

```
MGX8850.7.AXSM.a > clidbxlevel 1
Value of cliDbxLevel is now 1

MGX8850.7.AXSM.a > ? user

    Command          Access           Card         Log
    ---------------------------------------------------
    adduser          GROUP1           A             +
```

```
cnfuser          GROUP1          A             -
deluser          GROUP1          A             +
dspusers         ANYUSER         A|S           -
users            ANYUSER         A|S           -
```

clradjlnalmcnt

Clear Adjacent Line Alarm Count—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **clradjlnalmcnt** command lets you clear the statistical alarms and alarm counters for the adjacent back card in an automatic protection system (APS) configuration.

Note The **clradjlnalmcnt** command works for only inter-card APS.

Syntax

clradjlnalmcnt <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is 1 to the highest numbered line on the back card.

Related Commands

dspadjlnalm, dspadjlnalmcnt

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

On the card in slot 3, clear the alarm count for the card adjacent to bay 1, line 2.
Then, check the alarm count status for the same adjacent bay and line using time interval 1.

```
MGX8850.3.AXSME.a > clradjlnalmcnt 1.2

MGX8850.3.AXSME.a> dspadjlnalmcnt 1.2 1
  Interval Number : 1

  Section PM:
  -----------
  Num of LOSs     :          0
  Num of LOFs     :          0
  ESs             :          1
  SESs            :          0
  SEFSs           :          0
  CVs             :          4

  Line PM:
  -----------
  Num of AISs     :          0
  Num of RFIs     :          0
                        Near End      Far End
  ESs             :          1           0
  SESs            :          0           0
  CVs             :         39           0
  UASs            :          0           0
```

```
Path PM:
-----------
Num of AISs      :          0
Num of RFIs      :          0
                       Near End      Far End
ESs              :          0            0
SESs             :          1            1
CVs              :         25           25
UASs             :          0            0
```

clralmcnt

Clear Alarm Counters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Clear all the alarm counters and statistics on the specified line on the current card. All counters are reset to 0. All statistical alarms that are displayed by **dspalms** and **dspalmcnt** are cleared. The system does not display a response unless it detects a syntax error.

Syntax

clralmcnt <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is 1 to the highest numbered line on the back card.

Related Commands

dspalmcnt

Attributes (AXSM)

Log: yes	State: active	Privilege: SERVICE_GP

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

Clear the alarms on line 1 or the lower back card.

```
MGX8850.1.2.AXSM.a > clralmcnt 2.1
```

clrbecnt

Clear Bit Error Count—AXSM, AXSM-XG

The **clrbecnt** command lets you clear the APS-related bit error counters for a working line. To see the contents of the error counters, use the **dspbecnt** command.

Syntax

clrbecnt <*working-bay.line*>

Syntax Description

working-bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

dspbecnt

Attributes

Log: no	State: active	Privilege: SERVICE_GP

Example

```
MGX8850.5.AXSME.a > clrbecnt 1.3
Do you want to clear the bit error count in line 4.1.3 [Y/N]? y

The Count for line 4.1.3 is cleared
Do you want to clear the bit error count in line 5.1.3 [Y/N]? y

The Count for line 5.1.3 is cleared
```

clrbucketcstat

Clear Bucket Statistics—AXSM

Clear bucket statistics for the specified connection.

Syntax

clrbucketcstat <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	The logical port number, in the range from1 through 60
vpi	The VPI has the range 0–255 for a UNI or 0–4095 for a UNI or VNNI.
vci	The VCI in the range 1–65535.

Related Commands

dspbucketcstat

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Clear the bucket statistics for port 11, VPI 0, VCI 0.

```
M8850_LA.1.AXSM.a > clrbucketcstat 11 0 0

M8850_LA.1.AXSM.a >
```

clrcdcnt

Clear Card Counters—AXSM

Clears the counters for received and transmitted cells on the current card. See **dspcdcnt** for examples of the counter contents. The information that **clrcdcnt** clears and that **dspcdcnt** displays primarily applies to debugging.

Syntax

clrcdcnt

Syntax Description

No parameters

Related Commands

dspcdcnt, dspchancnt

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

```
MGX8850.13.AXSM.a > clrcdcnt
```

clrchancnt

Clear Channel Counters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Clears all counters for ATM cells on a connection (channel). The command applies to an SVC or an SPVC. For a list of displayed counters, see the example of **dspchancnt**. Once you execute **clrchancnt**, the previous counter contents are unrecoverable.

Note This command does not apply to OC-48 cards.

Syntax

clrchancnt <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	The logical port number. The ranges are : • AXSM: 1–60 • AXSM-E : 1–32 • AXSM-XG: 1–126
vpi	The VPI has the range 0–255 for a UNI or 0–4095 for a UNI or VNNI.
vci	The VCI in the range 1–65535.

Related Commands

dspchancnt

Attributes (AXSM)

Log: yes	State: active	Privilege: SERVICE_GP

Attributes (AXSM-E, AXSM-XG)

Log: yes	State: active	Privilege: SUPER_GP

Example

Clear all the connection counters on AXSM for connection 100.1000 on logical port 3.

```
MGX8850.1.AXSM.a > clrchancnt 3 100 1000
```

clrchancnts

Clear Channel Counters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Clears the statistics counters on all connections.

Syntax

clrchancnts

Syntax Description

No parameters

Related Commands

dspchancnt, clrchancnt

Attributes (AXSM)

Log: no	State: active	Privilege: SERVICE_GP

Attributes (AXSM-E, AXSM-XG)

Log: yes	State: active	Privilege: SUPER_GP

Example

```
MGX8850.13.AXSME.a > clrchancnts
```

clrchandbg

Clear Channelized Debugging —AXSM

Clears channelized debugging for the specified channel on the current AXSM.

Note To enable the channelized debugging feature, enter the **cnfchandbg** command.

Syntax

clrchandbg <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 60.
vpi	Virtual path identifier in the range 0–255 (UNI) or 0–4095 (NNI or VNNI).
vci	Virtual connection identifier (VCI): • For a VCC on a UNI, the range is 1–4095. On an NNI or VNNI, the VCI range is 1–65535. For MPLS, the recommended minimum VCI is 35. • For a VPC, the *vci* is 0.

Related Commands

cnfchandbg, **dspchandbgcnf, dspchandbgcnt**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Clear channelized debugging on logical interface (or port) 11, vpi 0, vci 0. Enter the **dspchandbgcnt** command to verify that the channels have been cleared.

```
M8850_NY.1.AXSM.a > clrchandbg 11 0 0
M8850_NY.1.AXSM.a > dspchandbgcnt 11 0 0
                                          Ingress         Egress
Instantaneous Qdepth:                        0              0
Arr CLP0 EFCI0 cells:                       11             11
Arr CLP0 EFCI1 cells:                        0              0
Arr CLP1 EFCI0 cells:                        0              0
Arr CLP1 EFCI1 cells:                        0              0

Dep CLP0 EFCI0 cells:                       11             11
Dep CLP0 EFCI1 cells:                        0              0
Dep CLP1 EFCI0 cells:                        0              0
Dep CLP1 EFCI1 cells:                        0              0

Detailed stats not enabled
```

clrchandbgcnt

Clear Channelized Debugging Counters—AXSM

Clear all debugging counters on a connection (channel).

Syntax

clrchandbgcnt <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	The logical port number, in the range from1 through 60
vpi	The VPI has the range 0–255 for a UNI or 0–4095 for a UNI or VNNI.
vci	The VCI in the range 1–65535.

Related Commands

dspchandbgcnt

Attributes

Log: yes	State: active	Privilege: SERVICE

Example

Clear all debugging counters on port 11, VPI 0, VCI 0.

```
M8850_LA.1.AXSM.a > clrchandbgcnt 11 0 0

M8850_LA.1.AXSM.a >
```

clrcosbdbgcnt

Clear COS Debugging Counters—AXSM

Clear all class of service buffer (COSB) debugging counters for the specified logical interface (or port) on the current AXSM.

Note To enable the COSB debugging feature, enter the **cnfcosbdbg** command.

Syntax

clrcosbdbgcnt <*ifNum*> <*cosb*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 64.
cosb	Class of service buffer (COSB) identifier, in the range from 1 through 16.

Related Commands

clrcosbdbgcnt, **cnfcosbdbg**, **dspcosbdbgcnt**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Clear COSB 16 counters on logical interface (or port) 11, and then display the COSB 16 counters for port 11 to verify that all counters have been cleared.

```
M8850_NY.1.AXSM.a > clrcosbdbgcnt 11 16
M8850_NY.1.AXSM.a > dspcosbdbgcnt 11 16
                                 Ingress          Egress
Instantaneous Qdepth:                  0               0
Average Qdepth:                        0               0
CLP0 dscd cells:                       -               0
CLP1 dscd cells:                       -               0
CLP0 departure cells:                  -         6172358
CLP1 departure cells:                  -               0
Arr CLP0 EFCI0 cells cnt[1]:           -            2410
Arr CLP0 EFCI1 cells cnt[1]:           -               0
Arr CLP1 EFCI0 cells cnt[1]:           -               0
Arr CLP1 EFCI1 cells cnt[1]:           -               0
Dep CLP0 EFCI0 cells cnt[1]:           -            2410
Dep CLP0 EFCI1 cells cnt[1]:           -               0
Dep CLP1 EFCI0 cells cnt[1]:           -               0
Dep CLP1 EFCI1 cells cnt[1]:           -               0
Arr CLP0 EFCI0 cells cnt[2]:           -               0
Arr CLP0 EFCI1 cells cnt[2]:           -               0
Arr CLP1 EFCI0 cells cnt[2]:           -               0
Arr CLP1 EFCI1 cells cnt[2]:           -               0
Dep CLP0 EFCI0 cells cnt[2]:           -               0
```

```
Dep CLP0 EFCI1 cells cnt[2]:          -             0
Dep CLP1 EFCI0 cells cnt[2]:          -             0

Type <CR> to continue, Q<CR> to stop:
Dep CLP1 EFCI1 cells cnt[2]:          -             0
Arr CLP0 EFCI0 cells cnt[3]:          -             0
Arr CLP0 EFCI1 cells cnt[3]:          -             0
Arr CLP1 EFCI0 cells cnt[3]:          -             0
Arr CLP1 EFCI1 cells cnt[3]:          -             0
Dep CLP0 EFCI0 cells cnt[3]:          -             0
Dep CLP0 EFCI1 cells cnt[3]:          -             0
Dep CLP1 EFCI0 cells cnt[3]:          -             0
Dep CLP1 EFCI1 cells cnt[3]:          -             0
Arr CLP0 EFCI0 cells cnt[4]:          -             0
Arr CLP0 EFCI1 cells cnt[4]:          -             0
Arr CLP1 EFCI0 cells cnt[4]:          -             0
Arr CLP1 EFCI1 cells cnt[4]:          -             0
Dep CLP0 EFCI0 cells cnt[4]:          -             0
Dep CLP0 EFCI1 cells cnt[4]:          -             0
Dep CLP1 EFCI0 cells cnt[4]:          -             0
Dep CLP1 EFCI1 cells cnt[4]:          -             0
Arr CLP0 EFCI0 cells cnt[5]:          -             0
Arr CLP0 EFCI1 cells cnt[5]:          -             0
Arr CLP1 EFCI0 cells cnt[5]:          -             0
Arr CLP1 EFCI1 cells cnt[5]:          -             0
Dep CLP0 EFCI0 cells cnt[5]:          -             0

Type <CR> to continue, Q<CR> to stop:
Dep CLP0 EFCI1 cells cnt[5]:          -             0
Dep CLP1 EFCI0 cells cnt[5]:          -             0
Dep CLP1 EFCI1 cells cnt[5]:          -             0
Arr CLP0 EFCI0 cells cnt[6]:          -             0
Arr CLP0 EFCI1 cells cnt[6]:          -             0
Arr CLP1 EFCI0 cells cnt[6]:          -             0
Arr CLP1 EFCI1 cells cnt[6]:          -             0
Dep CLP0 EFCI0 cells cnt[6]:          -             0
Dep CLP0 EFCI1 cells cnt[6]:          -             0
Dep CLP1 EFCI0 cells cnt[6]:          -             0
Dep CLP1 EFCI1 cells cnt[6]:          -             0
Arr CLP0 EFCI0 cells cnt[7]:          -             0
Arr CLP0 EFCI1 cells cnt[7]:          -             0
Arr CLP1 EFCI0 cells cnt[7]:          -             0
Arr CLP1 EFCI1 cells cnt[7]:          -             0
Dep CLP0 EFCI0 cells cnt[7]:          -             0
Dep CLP0 EFCI1 cells cnt[7]:          -             0
Dep CLP1 EFCI0 cells cnt[7]:          -             0
Dep CLP1 EFCI1 cells cnt[7]:          -             0
Arr CLP0 EFCI0 cells cnt[8]:          -             0
Arr CLP0 EFCI1 cells cnt[8]:          -             0
Arr CLP1 EFCI0 cells cnt[8]:          -             0

Type <CR> to continue, Q<CR> to stop:
Arr CLP1 EFCI1 cells cnt[8]:          -             0
Dep CLP0 EFCI0 cells cnt[8]:          -             0
Dep CLP0 EFCI1 cells cnt[8]:          -             0
Dep CLP1 EFCI0 cells cnt[8]:          -             0
Dep CLP1 EFCI1 cells cnt[8]:          -             0
Board memory full dscd:               -             0
Port memory full dscd:                -             0
CoS memory full dscd:                 -             0
CoS CLP Hi dscd:                      -             0
CoS CLP State Dscd:                   -             0
CoS EPD0 SOF dscd:                    -             0
CoS EPD1 SOF dscd:                    -             0
```

```
VC thresholds dscd:                    -              0
```

clrfdrstat

Clear Feeder Statistics—AXSM, AXSM-E, AXSM-XG

Clears the LMI and node statistics for the feeder on the specified port (*ifNum*).

For more detailed information on configuring a feeder, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Note This command is not supported on a Cisco MGX 8950 switch.

Syntax

clrfdrstat <*ifNum*>

Syntax Description

ifNum	The interface number of the port on which to clear the feeder statistics. The interface numbers of active ports are displayed in the **dspports** command report. Range: 1–60.

Related Commands

dspfdrstat

Attributes

Log: yes	State: active, standby	Privilege: SERVICE_GP

Example

```
MGX8850.13.AXSME.a > clrfdrstat 1

MGX8850.13.AXSME.a >
```

clrilmicnt

Clear ILMI Counters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Clears the ILMI statistics for a partition and logical interface (or port) on a service module.

Syntax

clrilmicnt <*ifNum*> <*partId*>

Syntax Description

ifNum	The ranges for logical interface (or AXSM port) number are as follows: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
partId	The ranges for partition identifier are as follows: • AXSM: 1–5 • AXSM-E, AXSM-XG: 1–20

Related Commands

dspilmicnt, dspilmi, dspilmis

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Examples

Clear the ILMI statistics for logical interface 1, resource partition 1. Before doing so, confirm the existence of these entities by executing **dspparts**.

```
MGX8850.1.AXSM.a > dspparts
if   part Ctlr egr      egr      ingr     ingr     min max   min   max  min   max
Num  ID   ID   GuarBw   MaxBw    GuarBw   MaxBw    vpi vpi   vci   vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
--------------------------------------------------------------------------------
 1   1    2   10000    10000    10000    10000    10  100   100  1000      0     10


MGX8850.1.AXSM.a > clrilmicnt 1 1
ilmi stats for ifNum 1, partId 1 cleared
```

clrimadelay

Clear IMA Delay—AXSM-32-T1E1-E

This command clears the accumulated delay in the signal propagation time for all the links in the specified IMA *group*. Using this command may improve performance.

Syntax

clrimadelay <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

None

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
clrimadelay 1.1
```

clrimagrpalmcnt

Clear IMA Group Alarm Count—AXSM-32-T1E1-E

Clears the alarm count for the specified IMA *group*.

Syntax

clrimagrpalmcnt <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

clrimagrpalmcnts, clrimagrpcnts, clrimalnkcnts, dspimagrpalmcnt, dspimagrpbucketcnt, dspimalnkbucketcnt

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

```
MGX8850.11.AXSME.a > clrimagrpalmcnt 1.1

MGX8850.11.AXSME.a >
```

clrimagrpalmcnts

Clear IMA Group Alarm Counters—AXSM-32-T1E1-E

Clears all the alarm counters for all configured IMA groups.

Syntax

clrimagrpalmcnts

Syntax Description

No parameters

Related Commands

clrimagrpalmcnt, clrimagrpcnts, clrimalnkcnts, dspimagrpalmcnt, dspimagrpbucketcnt, dspimalnkbucketcnt

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

```
MGX8850.11.AXSME.a > clrimagrpalmcnts

MGX8850.11.AXSME.a >
```

clrimagrpcnt

Clear IMA Group Counter—AXSM-32-T1E1-E

This command clears all performance and statistic counters for an IMA group.

Syntax

clrimagrpcnt <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

addimagrp, delimagrp, dspimagrp, dspimagrps, cnfimagrp, rstimagrp, dspimalnk, addimalnk, delimalnk

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Clear IMA group counter bay 1, group 16:

```
MGX8850.2.AXSME.a > clrimagrpcnt 1.16
```

clrimalnkcnt

Clear IMA Link Counter—AXSM-32-T1E1-E

This command clears all IMA Link performance and statistic counters on the specified *link*.

Syntax

clrimalnkcnt <*link*>

Syntax Description

link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16

Related Commands

clrimalnkcnts, dspimagrp, dspimagrps, dspimagrpcnt, addimalnk, delimalnk, dspimalnk

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

To clear the link designated as bay 1, ds3 line 16:

```
MGX8850.2.AXSME.a > clrimalnkcnt 1.16
```

clrimalnkcnts

Clear IMA Alarm Counts—AXSM-32-T1E1-E

Clears the link counters for all configured IMA links.

Syntax

clrimalnkcnts

Syntax Description

No parameters

Related Commands

clrimagrpalmcnt, clrimagrpalmcnts, clrimagrpcnts, dspimagrpalmcnt, dspimagrpbucketcnt, dspimalnkbucketcnt

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

```
MGX8850.11.AXSME.a > clrimalnkcnts

MGX8850.11.AXSME.a >
```

clrlmistat

Clear LMI Statistics—AXSM, AXSM-XG

Displays the Local Management Interface (LMI) statistics on an AXSM port. The **dsplmistat** command lets you display general statistics about an LMIs (XLMIs) on an AXSM interface. See also description of the **addlmi** command.

Syntax

dsplmistat <*ifNum*>

Syntax Description

ifNum	The logical interface number has a range of 1–60.

Related Command

dellmi, **uplmi**, **dnlmi**, **uplmi**, **dsplmistat**, **addlmi**, **dsplmi**, **dsplmis**

Attributes

Log: yes	State: active, standby	Privilege: ANYUSER

Example

After checking the statistics on logical interface 2, clear the LMI statistics then recheck them.

```
MGX8850.1.AXSM.a > dsplmistat 2

STATUS REPORT ENQUIRY transmitted : 1
STATUS REPORT ENQUIRY received    : 1
STATUS REPORT transmitted         : 1
STATUS REPORT received            : 1
UPDATE STATUS transmitted         : 0
UPDATE STATUS received            : 0
UPDATE STATUS ACK transmitted     : 0
UPDATE STATUS ACK received        : 0
Invalid PDU received              : 0
Invalid PDU length received       : 0
Invalid PDU IEs received          : 0
Invalid Transaction Num received  : 0
Unknown PDU type received         : 0

NODE STATUS enquiry transmitted   : 3605
NODE STATUS enquiry received      : 3605
NODE STATUS ack transmitted       : 3605
NODE STATUS ack received          : 3605
NODE STATUS degrade transmitted   : 0
NODE STATUS degrade received      : 0
NODE STATUS delete transmitted    : 0
NODE STATUS delete received       : 0
NODE STATUS unknown received      : 0

MGX8850.1.AXSM.a > clrlmistat 2
```

```
MGX8850.1.AXSM.a > dsplmistat 2

STATUS REPORT ENQUIRY transmitted : 0
STATUS REPORT ENQUIRY received    : 0
STATUS REPORT transmitted         : 0
STATUS REPORT received            : 0
UPDATE STATUS transmitted         : 0
UPDATE STATUS received            : 0
UPDATE STATUS ACK transmitted     : 0
UPDATE STATUS ACK received        : 0
Invalid PDU received              : 0
Invalid PDU length received       : 0
Invalid PDU IEs received          : 0
Invalid Transaction Num received  : 0
Unknown PDU type received         : 0

NODE STATUS enquiry transmitted   : 3
NODE STATUS enquiry received      : 3
NODE STATUS ack transmitted       : 3
NODE STATUS ack received          : 3
NODE STATUS degrade transmitted   : 0
NODE STATUS degrade received      : 0
NODE STATUS delete transmitted    : 0
NODE STATUS delete received       : 0
NODE STATUS unknown received      : 0

MGX8850.1.AXSM.a >
```

clrlmitrace

Clear Local Management Interface Trace—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **clrlmitrace** command to clear the current local management interface (LMI) trace.

Syntax

clrlmitrace

Syntax Description

None.

Related Commands

cnflmitrace, dsplmitrace

Attributes

Log: yes	State: active, standby	Privilege: CISCO_GP

Example

Clear the ILMI trace on the current AXSM.

```
M8850_LA.1.AXSM.a > clrlmitrace

M8850_LA.1.AXSM.a >
```

clrlncnt

Clear Line Counters—AXSM, AXSM-E, AXSM-32-T1E1-E

See **dsplncnt** for descriptions of the counters. The system returns a response only if an error occurs.

Syntax

clrlncnt <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The range for *line* can be 1 to the highest numbered line on the back card.

Related Commands

dsplncnt

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

Clear the line counters for line 1 in bay 1 on the current AXSM.

```
MGX8850.1.AXSM.a > clrlncnt 1.1
```

clrlntrace

Clear Line Trace—AXSM, AXSM-E, AXSM-32-T1E1-E

Clears the trail trace bytes that were transmitted using **cnfln -txtrace** on the specified E3 line (*bay.line*) and sets them to the default NULL value. Use **dspln** to see if the trail trace bytes are cleared.

Syntax

clrlntrace *bay.line*

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The range for *line* can be 1 to the highest numbered line on the back card.

Related Commands

cnf.n, dspln

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

This example shows how to transmit and display and then clear and display trail trace bytes.

```
MGX8850.12.AXSME.a > cnfln -e3 1.1 -txtrace 123456789123450
Cupertino.12.AXSME.a > dspln -e3 1.1
  Line Number           : 1.1
  Admin Status          : Up                Alarm Status        :
Critical
  Line Type             : e3g832adm         Number of ports     : 0
  Line Coding           : e3HDB3            Number of partitions: 0
  Line Length(meters)   : 0                 Number of SPVC      : 0
  Loopback              : NoLoop            Number of SPVP      : 0
  Xmt. Clock source     : localTiming       Number of SVC       : 0
  Xmt. Trace            : 123456789123450

MGX8850.12.AXSME.a > clrlntrace 1.1
MGX8850.12.AXSME.a > dspln -e3 1.1
  Line Number           : 1.1
  Admin Status          : Up                Alarm Status        :
Critical
  Line Type             : e3g832adm         Number of ports     : 0
  Line Coding           : e3HDB3            Number of partitions: 0
  Line Length(meters)   : 0                 Number of SPVC      : 0
  Loopback              : NoLoop            Number of SPVP      : 0
  Xmt. Clock source     : localTiming       Number of SVC       : 0
  Xmt. Trace            :
```

clrpathalmcnt

Clear Path Alarm Counters—AXSM-XG

Clears all the current alarm counters on the specified path (*path_num*). All counters are reset to zero.

Syntax

clrpathalmcnt <*path_num*>

Syntax Description

path_num	Identifies the path for which you want to clear the current alarm counters. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.

Related Commands

dsppathalmcnt

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

```
MGX8950.3.AXSMXG.a > clrpathalmcnt 1.1.1
```

clrportcnt

Clear Port Counter— AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Clear counter values on a specific logical port.

Syntax

clrportcnt <*ifNum*>

Syntax Description

ifNum	The logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126

Related Commands

clrportcnts, **dspportcnt**

Attributes (AXSM)

Log: yes	State: active	Privilege: SERVICE_GP

Attributes (AXSM-E, AXSM-XG)

Log: yes	State: active	Privilege: SUPER_GP

Example

Display the counters for logical interface 1. then clear the counters on port 1. Check the port counters after clearing them.

```
MGX8850.1.AXSM.a > dspportcnt 1

 Cleared at      : 10/26/2001 00:00:44
 Current time    : 12/02/2001 21:44:41
 Elapsed time    : 37 day(s) 21:43:21 [hh:mm:ss]

                          Total             Running Avg (cps)   Peak
--------------------------------------------------------------------
Arrival CLP0    Ing: 0000000000000007326214           2          21
Arrival CLP1    Ing: 0000000000000000000000           0           0
Ar CLP0 discard Ing: 0000000000000000000056           0           3
Ar CLP1 discard Ing: 0000000000000000000000           0           0
Departure CLP0  Ing: 0000000000000007326211           2          21
Departure CLP1  Ing: 0000000000000000000000           0           0

Arrival CLP0    Egr: 0000000000000007326217           2          21
Arrival CLP1    Egr: 0000000000000000000000           0           0
Ar CLP0 discard Egr: 0000000000000000000000           0           0
Ar CLP1 discard Egr: 0000000000000000000000           0           0
Departure CLP0  Egr: 0000000000000007326218           2          21
Departure CLP1  Egr: 0000000000000000000000           0           0

MGX8850.1.AXSM.a > clrportcnt 1

MGX8850.1.AXSM.a > dspportcnt 1

 Cleared at      : 12/02/2001 21:44:56
 Current time    : 12/02/2001 21:45:19
 Elapsed time    : 0 day(s) 0:0:22 [hh:mm:ss]

                          Total             Running Avg (cps)   Peak
--------------------------------------------------------------------
Arrival CLP0    Ing: 0000000000000000000054           2           2
Arrival CLP1    Ing: 0000000000000000000000           0           0
Ar CLP0 discard Ing: 0000000000000000000000           0           0
Ar CLP1 discard Ing: 0000000000000000000000           0           0
Departure CLP0  Ing: 0000000000000000000054           2           2
Departure CLP1  Ing: 0000000000000000000000           0           0

Arrival CLP0    Egr: 0000000000000000000051           2           2
Arrival CLP1    Egr: 0000000000000000000000           0           0
Ar CLP0 discard Egr: 0000000000000000000000           0           0
Ar CLP1 discard Egr: 0000000000000000000000           0           0
Departure CLP0  Egr: 0000000000000000000051           2           2
Departure CLP1  Egr: 0000000000000000000000           0           0

MGX8850.1.AXSM.a >
```

clrportcnts

Clear Port Counters—AXSM

Clear all port counters on the current AXSM. The system does not return a message unless a syntax error occurs (such as a spurious character following the command on the CLI).

Syntax

clrportcnts

Syntax Description

No parameters

Related Commands

clrportcnt, **dspportcnt**

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

Display the counters for logical interface 2, then clear all the port counters on the current AXSM. Again display the counters for logical interface 2.

```
MGX8850.1.AXSM.a > dspportcnt 2

 Cleared at      : 10/26/2001 00:00:44
 Current time    : 12/02/2001 21:46:42
 Elapsed time    : 37 day(s) 21:45:22 [hh:mm:ss]

                          Total             Running Avg (cps)   Peak
--------------------------------------------------------------------
Arrival CLP0    Ing: 0000000000000000655030            0            0
Arrival CLP1    Ing: 0000000000000000000000            0            0
Ar CLP0 discard Ing: 0000000000000000000000            0            0
Ar CLP1 discard Ing: 0000000000000000000000            0            0
Departure CLP0  Ing: 0000000000000000655030            0            0
Departure CLP1  Ing: 0000000000000000000000            0            0

Arrival CLP0    Egr: 0000000000000000655030            0            0
Arrival CLP1    Egr: 0000000000000000000000            0            0
Ar CLP0 discard Egr: 0000000000000000000000            0            0
Ar CLP1 discard Egr: 0000000000000000000000            0            0
Departure CLP0  Egr: 0000000000000000655030            0            0
Departure CLP1  Egr: 0000000000000000000000            0            0

MGX8850.1.AXSM.a > clrportcnts

MGX8850.1.AXSM.a > dspportcnt 2

 Cleared at      : 12/02/2001 21:46:57
 Current time    : 12/02/2001 21:47:02
 Elapsed time    : 0 day(s) 0:0:5 [hh:mm:ss]
```

```
                          Total             Running Avg (cps)   Peak
--------------------------------------------------------------------
Arrival CLP0    Ing: 0000000000000000000000           0            0
Arrival CLP1    Ing: 0000000000000000000000           0            0
Ar CLP0 discard Ing: 0000000000000000000000           0            0
Ar CLP1 discard Ing: 0000000000000000000000           0            0
Departure CLP0  Ing: 0000000000000000000000           0            0
Departure CLP1  Ing: 0000000000000000000000           0            0

Arrival CLP0    Egr: 0000000000000000000000           0            0
Arrival CLP1    Egr: 0000000000000000000000           0            0
Ar CLP0 discard Egr: 0000000000000000000000           0            0
Ar CLP1 discard Egr: 0000000000000000000000           0            0
Departure CLP0  Egr: 0000000000000000000000           0            0
Departure CLP1  Egr: 0000000000000000000000           0            0

MGX8850.1.AXSM.a >
```

clrportdbgcnt

Clear Port Debug Counters—AXSM

Clear all port debugging counters on the current AXSM. The system does not return a message unless a syntax error occurs (such as an extra character following the command on the CLI).

Note To enable the port debugging feature, enter the **cnfportdbg** <*ifNum*> **1** command. Replace <*ifNum*> with the number of the port on which you want to enable the debugging feature.

Syntax

clrportdbgcnt <*ifNum*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 60.

Related Commands

cnfportdbg, **dspportdbgcnt**

Attributes

Log: yes	State: active	Privilege: SERVICE_GP

Example

Display the counters for logical interface (or port) 11, then clear all the port debugging counters on the current AXSM. Again, display the counters for logical interface 11.

```
M8850_NY.1.AXSM.a > dspportdbgcnt 11
                              Ingress          Egress
Arrival cells     cnt[1]:           0              51
Threshold dscd    cnt[1]:           0               0
Programmed dscd   cnt[1]:           0               0
Departure cells   cnt[1]:           0              47

Arrival cells     cnt[2]:           0               0
Threshold dscd    cnt[2]:           0               0
Programmed dscd   cnt[2]:           0               0
Departure cells   cnt[2]:           0               0

Arrival cells     cnt[3]:           0               0
Threshold dscd    cnt[3]:           0               0
Programmed dscd   cnt[3]:           0               0
Departure cells   cnt[3]:           0               0

Arrival cells     cnt[4]:           0               0
Threshold dscd    cnt[4]:           0               0
Programmed dscd   cnt[4]:           0               0
Departure cells   cnt[4]:           0               0

Arrival cells     cnt[5]:           0               0
```

```
Type <CR> to continue, Q<CR> to stop:
Threshold dscd    cnt[5]:          0              0
Programmed dscd   cnt[5]:          0              0
Departure cells   cnt[5]:          0              0

Arrival cells     cnt[6]:          0              0
Threshold dscd    cnt[6]:          0              0
Programmed dscd   cnt[6]:          0              0
Departure cells   cnt[6]:          0              0

Arrival cells     cnt[7]:          0              0
Threshold dscd    cnt[7]:          0              0
Programmed dscd   cnt[7]:          0              0
Departure cells   cnt[7]:          0              0

Arrival cells     cnt[8]:          0              0
Threshold dscd    cnt[8]:          0              0
Programmed dscd   cnt[8]:          0              0
Departure cells   cnt[8]:          0              0

Board memory full dscd:            0              0
Port  memory full dscd:            0              0
CoS thresholds dscd:               0              0

Type <CR> to continue, Q<CR> to stop:
VC  thresholds dscd:               0              0

M8850_NY.1.AXSM.a > clrportdbgcnt 11

M8850_NY.1.AXSM.a > dspportdbgcnt 11
                             Ingress         Egress
Arrival cells     cnt[1]:          0             12
Threshold dscd    cnt[1]:          0              0
Programmed dscd   cnt[1]:          0              0
Departure cells   cnt[1]:          0             12

Arrival cells     cnt[2]:          0              0
Threshold dscd    cnt[2]:          0              0
Programmed dscd   cnt[2]:          0              0
Departure cells   cnt[2]:          0              0

Arrival cells     cnt[3]:          0              0
Threshold dscd    cnt[3]:          0              0
Programmed dscd   cnt[3]:          0              0
Departure cells   cnt[3]:          0              0

Arrival cells     cnt[4]:          0              0
Threshold dscd    cnt[4]:          0              0
Programmed dscd   cnt[4]:          0              0
Departure cells   cnt[4]:          0              0

Arrival cells     cnt[5]:          0              0

Type <CR> to continue, Q<CR> to stop:
Threshold dscd    cnt[5]:          0              0
Programmed dscd   cnt[5]:          0              0
Departure cells   cnt[5]:          0              0

Arrival cells     cnt[6]:          0              0
Threshold dscd    cnt[6]:          0              0
Programmed dscd   cnt[6]:          0              0
Departure cells   cnt[6]:          0              0
```

```
Arrival cells     cnt[7]:          0             0
Threshold dscd    cnt[7]:          0             0
Programmed dscd   cnt[7]:          0             0
Departure cells   cnt[7]:          0             0

Arrival cells     cnt[8]:          0             0
Threshold dscd    cnt[8]:          0             0
Programmed dscd   cnt[8]:          0             0
Departure cells   cnt[8]:          0             0

Board memory full dscd:            0             0
Port  memory full dscd:            0             0
CoS thresholds dscd:               0             0

Type <CR> to continue, Q<CR> to stop:
VC  thresholds dscd:               0             0


M8850_NY.1.AXSM.a > clrportdbgcnt 11

M8850_NY.1.AXSM.a > dspportdbgcnt 11
                             Ingress         Egress
Arrival cells     cnt[1]:          0            12
Threshold dscd    cnt[1]:          0             0
Programmed dscd   cnt[1]:          0             0
Departure cells   cnt[1]:          0            12

Arrival cells     cnt[2]:          0             0
Threshold dscd    cnt[2]:          0             0
Programmed dscd   cnt[2]:          0             0
Departure cells   cnt[2]:          0             0

Arrival cells     cnt[3]:          0             0
Threshold dscd    cnt[3]:          0             0
Programmed dscd   cnt[3]:          0             0
Departure cells   cnt[3]:          0             0

Arrival cells     cnt[4]:          0             0
Threshold dscd    cnt[4]:          0             0
Programmed dscd   cnt[4]:          0             0
Departure cells   cnt[4]:          0             0

Arrival cells     cnt[5]:          0             0

Type <CR> to continue, Q<CR> to stop:
Threshold dscd    cnt[5]:          0             0
Programmed dscd   cnt[5]:          0             0
Departure cells   cnt[5]:          0             0

Arrival cells     cnt[6]:          0             0
Threshold dscd    cnt[6]:          0             0
Programmed dscd   cnt[6]:          0             0
Departure cells   cnt[6]:          0             0

Arrival cells     cnt[7]:          0             0
Threshold dscd    cnt[7]:          0             0
Programmed dscd   cnt[7]:          0             0
Departure cells   cnt[7]:          0             0

Arrival cells     cnt[8]:          0             0
Threshold dscd    cnt[8]:          0             0
Programmed dscd   cnt[8]:          0             0
Departure cells   cnt[8]:          0             0
```

```
Board memory full dscd:           0              0
Port  memory full dscd:           0              0
CoS thresholds dscd:              0              0

Type <CR> to continue, Q<CR> to stop:
VC  thresholds dscd:              0              0

M8850_NY.1.AXSM.a >
```

clrsarcnt

Clear SAR Counters—AXSM, AXSM-E, AXSM-XG

Clears the Segmentation and Reassembly (SAR) counters on the current AXSM.

Syntax

clrsarcnt

Syntax Description

None

Related Commands

dspsarcnt

Attributes

Log: yes	State: active	Privilege: ANY

Example

Clear the SAR counters on the current AXSM, and the enter the **dspsarcnt** command to verify all SAR counters have been cleared.

```
M8850_NY.1.AXSM.a > clrsarcnt

M8850_NY.1.AXSM.a > dspsarcnt

                <IPC SAR General Info>

                ===================

  SAR Version                   :   0        (0x0)

  SAR Status                    :   52        (0x34)

  SAR Current State             :   RUN
  SAR Previous State            :   STANDBY
  SAR Cell Format               :     STI

               <IPC SAR General Counters>

               =======================

  Rcv Cell Cnt on Unknown LCN   :   0                 (0x0)

  Last Unknown LCN              :   0                 (0x0)

  ACI Xmt FIFO Full Cnt         :   0                 (0x0)

  Data Xmt Cell Cnt             :   2188              (0x88c)


Type <CR> to continue, Q<CR> to stop:
```

```
  Data Rcv Cell Cnt            :   513              (0x201)

  Mgm Xmt Frame Cnt            :   256              (0x100)

  Mgm Rcv Frame Cnt            :   286              (0x11e)

  Mgm Rcv Buffer Overflow      :   0                (0x0)

  RC_BOC Error                 :   0                (0x0)

  Rcv Fifo full cell drop cnt  :   0                (0x0)

  Rcv LCN Out of Range         :   0                (0x0)

  EDMA Rx Completion Full Cnt  :   0                (0x0)

  EDMA Tx Completion Full Cnt  :   0                (0x0)

  # TxCell Compl Entries       :   0                (0x0)

  # Received over size frames  :   0                (0x0)


Type <CR> to continue, Q<CR> to stop:
  # Received frames with len err:   0               (0x0)

  # Received frames with CRC err:   0               (0x0)




               <Non-IPC SAR General Counters>

               ===========================
Cells Sent OK 0
Cells Sent Direct to HW 0
Cells Sent to SW Ring 0
Cells Sent to SW Ring that were Discarded 0
Cells Recd. OK 0
Cells Recd. OK that were Posted 0
Cells Recd. OK that were Discarded 0
Frames Requested to be Sent 179
Frames Sent OK 179
Frame Descriptors Recd. 171
Unchained Frame Descriptors Recd. 171

Type <CR> to continue, Q<CR> to stop:
Frames Recd. OK that were Posted  171

M8850_NY.1.AXSM.a >
```

clrscrn

Clear Screen—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use **clrscrn** to clear the control terminal screen. After this command runs, only the current command line prompt appears on the screen.

Syntax

clrscrn

Related Commands

None

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

Clear the screen.

```
MGX8850.11.AXSM.a > clrscrn

MGX8850.11.AXSM.a >
```

cmdhistory

Display Command History

The **cmdhistory** command has been deleted and is no longer in use. Use **history** instead.

cnfabr

Configure ABR—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Configures the VS/VD-specific parameters for an existing ABR connection. The connection must be of service type ABR (in the **addcon** command, *service type* = 10).

The **cnfabr** command is available only on the AXSM-E, AXSM-32-T1E1-E, and AXSM-XG. These cards support ABR virtual source and virtual destination (VS/VD). Therefore, they can generate resource management (RM) cells and turn them around.

Note With ABR VS/VD, you can specify parameters but leave the VS/VD service disabled. You can later enable the service and thus activate the previously configured parameters. You can enable VS/VD at the PNNI port level by using the **cnfintfvsvd** command on the PXM45.

Warning **Changing connection parameters will result in a momentary loss of traffic.**

Warning **Changing routing parameters will not take effect on the slave endpoint of a DAX connection.**

Syntax

cnfabr <*ifNum*> <*vpi* <*vci*> **-icr** <*Initial cell rate*>] **-adtf** <*ACR decr. factor*>]
-rdf <*Rate decr. factor*>] **-rif** <*Rate incr. factor*>] **-nrm** <*Cells per fwd RM*>]
-trm <*Time between fwd RMs*>] **-cdf** <*cutoff decrease factor*>] **-frtt** <*fix round trip delay*>]
-tbe <*transient buffer exposure*>] **-intvsvd** <*internal vsvd config*>] **-extvsvd** <*external vsvd config*>]

Syntax Description

ifNum	The logical port number of the connection. The ranges are: • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI range for a UNI port endpoint is 0–255. The VPI range for an NNI or VNNI port endpoint is 0–4095.
vci	The VCI range for a UNI port endpoint is 1–4095. The VCI range for a NNI port endpoint is 1–65535. For MPLS, the recommended minimum VCI is 35.
-icr	Initial Cell Rate (ICR) in cells per second. This is the rate at which the source should begin transmitting, and is also the rate at which the source should resume transmitting after an idle period. The range is 0–4294967295 cells per second.
-adtf	ACR Decrease Time Factor (ADTF). This is the time permitted to decrease the cell rate from the RM-cell rate to the Allowed Cell Rate (ACR) for normal traffic. The range is 1–1023 milliseconds.
-rdf	Rate Decrease Factor (RDF). This is the factor by which to decrease the Allowed Cell Rate (ACR). *RDF* is a power of 2 in the range 1/32768 to 1.
-rif	Rate Increase Factor (RIF). This is the factor by which to increase the Allowed Cell Rate (ACR). *RIF* is a power of 2 in the range 1/32768 to 1.

-nrm	Maximum number of cells that the source can send for each forward RM-cell. *Nrm* is a power of 2 in the range 2–256.
-trm	The maximum number of milliseconds for one RM-cell to travel from source to endpoint. The range is 100 x 2^{-7} to 100 x 2^0 milliseconds.
-cdf	Cutoff Decrease Factor (CDF). This controls the decrease in Allowed Cell Rate (ACR) associated with Missing RM-cell count (CRM). *CDF* can be either or the following: • Zero • Power of 2 in the range 1/64 to 1 CRM limits the number of forward RM-cells that may be sent in the absence of received backward RM-cells. CRM is an integer. Its size is implementation specific.
-frtt	Fixed Round-Trip Time (FRTT). This is the sum of the fixed delays plus the propagation delays from the source to the destination and back. The range is 0–16.7 seconds.
-tbe	Transient Buffer Exposure (TBE). This is the negotiated number of cells that the network would like to limit the source to sending during startup periods, before the first RM-cell returns. The range is 0–16,777,215 cells.
-intvsvd	Enable or disable for VS/VD on the internal loop. • 1 = Off • 2 = On • 3 = Unspecified (Unspecified means that the connection takes the on or off status of VS/VD from the VS/VD specification in the SCT file.) See description of the **cnfintfvsvd** command to enable VS/VD at the PNNI port level. Default: off
-extvsvd	Enable or disable for VS/VD on the external loop. • 1 = Off • 2 = On • 3 = Unspecified (Unspecified means that the connection takes the on or off status of VS/VD from the VS/VD specification in the SCT file.) See description of the **cnfintfvsvd** command to enable VS/VD at the PNNI port level. Default: off

Related Commands

addcon, **cnfabrtparmdft**, **dspabrtparmdft**, **cnfintfvsvd**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.1.10.AXSME.a > cnfabr 1 77 777 -mcr 100
 THE SG NUM is: 0.
```

```
Configuration successful
```

cnfalm

Configure Alarm—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Configures statistical alarm thresholds for a line. The configurable items for SONET and PLCP are defined in RFC 2258. The configurable items for DS3 and E3 are defined in RFC 2496. The items that constitute a configuration are:

- Line type: SONET, DS3, E3, or PLCP
- Tested layer: section, line, or path (for example, SONET line)
- Test periods of 15 minutes and 24 hours
- Degrees of error-time: *errored seconds* and *severely errored seconds*
- Types of errors, including framing errors, code violations, and unavailable
- Severity of alarm triggered when a threshold is crossed: minor or major

A keyword identifies the alarm criteria. Each keyword identifies the tested layer (line, and so on), the type of threshold (errored seconds, and so on), and the test period of 15 minutes or 24 hours. For example, **-lnes15** indicates the number of errored seconds on the line layer during any 15-minute period. See the Syntax Description for a list and definitions of all keywords.

Syntax

The required parameters are the line type the line identifier in the format *bay.line*, and the severity of the alarm (minor or major). All other parameters are optional and must be preceded by the keyword that identifies the type of parameter.

Generic Syntax Description

The generic syntax is:

cnfalm <*line type*> <*bay.line*> <*alarm severity*> <*thresholds*>

The meaning of the generic syntax appears in the following list. See the subsequent lists for the descriptions of alarm severities and thresholds for each *line type*.

line type	The line type is specified as one of the following keywords (including the hyphen): -sonetsec (for SONET section) -sonetline (for SONET line) -sonetpath (for SONET path) -ds3 -e3 -plcp
bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

alarm severity	A keyword and number to identify the severity of the alarm that is triggered when any of the specified thresholds is crossed: 1 = minor alarm, and 2 = major alarm. Precede the alarm severity with the appropriate keyword. For the alarm severity keyword for each *line type*, see the first item in each of the lists follows. (For example, -**secsev** refers to the severity of the section alarm on a SONET line.)
thresholds	The number of instances of whatever the keyword identifies. The range for each *threshold* is 1 to 2^32-1. The keyword precedes each *threshold*. For example, **-lnsesf15 10** means 10 instances of severely errored framing seconds on a line during a 15-minute period.

Thresholds for SONET Section

-secsev *Severity*	Severity of the alarm (1 = minor, 2 = major) for SONET section.
-seces15 *ES15min*	Errored seconds during a 15-minute period.
-seces24 *ES24Hr*	Errored seconds during a 24-hour period.
-secses15 *SES15min*	Severely errored seconds during a 15-minute period.
-secses24 *SES24Hr*	Severely errored seconds during a 24-hour period.
-secsefs15 *SEFS15min*	Severely errored frame seconds during a 15-minute period.
-secsefs24 *SEFS24Hr*	Severely errored frame seconds during a 24-hour period.
-seccv15 *UAS15min*	Unavailable seconds during a 15-minute period.
-seccv24 *UAS24Hr*	Unavailable seconds during a 24-hour period.

Thresholds for SONET Line

-lnsev *Severity*	Severity of the alarm (1 = minor, 2 = major) for SONET line.
-lnes15 *ES15min*	Errored seconds during a 15-minute period.
-lnes24 *ES24Hr*	Errored seconds during a 24-hour period.
-lnses15 *SES15min*	Severely errored seconds during a 15-minute period.
-lnses24 *SES24Hr*	Severely errored seconds during a 24-hour period.
-lncv15 *CV15min*	Code violations during a 15-minute period.
-lncv24 *CV24Hr*	Code violations seconds during a 24-hour period.
-lnuas15 *UAS15min*	Unavailable seconds during a 15-minute period.
-lnuas24 *UAS24Hr*	Unavailable seconds during a 24-hour period.

Thresholds for SONET Path

-sev	Severity of the alarm (1 = minor, 2 = major) for SONET path.
-es15 *ES15min*	Errored seconds during a 15-minute period.
-es24 *ES24Hr*	Errored seconds during a 24-hour period.
-ses15 *SES15min*	Severely errored seconds during a 15-minute period.
-ses24 *SES24Hr*	Severely errored seconds during a 24-hour period.
-cv15 *CV15min*	Code violations during a 15-minute period.

-cv24 *CV24Hr*	Code violations seconds during a 24-hour period.
-uas15 *UAS15min*	Unavailable seconds during a 15-minute period.
-uas24 *UAS24Hr*	Unavailable seconds during a 24-hour period.

Thresholds for DS3

-dsev *severity*	Severity of the alarm (1 = minor, 2 = major) for DS3.
-lcv15 *LCV15min*	Code violations for a line during a 15-minute period.
-lcv24 *LCV24Hr*	Code violations for a line seconds during a 24-hour period.
-les15 *LES15min*	Line errored seconds during a 15-minute period.
-les24 *LES24Hr*	Line errored seconds during a 24-hour period.
-pcv15 *PCV15min*	P-bit coding violations for a line during a 15-minute period.
-pcv24 *PCV24Hr*	P-bit coding violations for a line during a 24-hour period.
-pes15 *PES15min*	P-bit errored seconds during a 15-minute period.
-pes24 *PES24Hr*	P-bit errored seconds during a 24-hour period.
-pses15 *PSES15min*	P-bit severely errored seconds during a 15-minute period.
-pses24 *PSES24Hr*	P-bit severely errored seconds during a 24-hour period.
-sefs15 *SEFS15min*	Severely errored frame seconds during a 15-minute period.
-sefs24 *SEFS24Hr*	Severely errored frame seconds during a 24-hour period.
-uas15 *UAS15min*	Unavailable seconds during a 15-minute period.
-uas24 *UAS24Hr*	Unavailable seconds during a 24-hour period.

Thresholds for E3

-dsev *severity*	Severity of the alarm (1 = minor, 2 = major) for DS3.
-lcv15 *LCV15min*	Code violations for a line during a 15-minute period.
-lcv24 *LCV24Hr*	Code violations for a line seconds during a 24-hour period.
-les15 *LES15min*	Line errored seconds during a 15-minute period.
-les24 *LES24Hr*	Line errored seconds during a 24-hour period.
-sefs15 *SEFS15min*	Severely errored frame seconds during a 15-minute period.
-efs24 *SEFS24Hr*	Severely errored frame seconds during a 24-hour period.
-duas15 *UAS15min*	Unavailable seconds during a 15-minute period.
-duast24 *UAS24Hr*	Unavailable seconds during a 24-hour period.

Thresholds for PLCP

-psev *severity*	Severity of the alarm (1 = minor, 2 = major) for PLCP.
-bcv15 *CV15min*	Bipolar violation code violations during a 15-minute period.
-bcv24 *CV24Hr*	Bipolar violation code violations during a 24-hour period.
-bes15 *ES15min*	Bipolar violation errored seconds during a 15-minute period.
-bes24 *ES24Hr*	Bipolar violation errored seconds during a 24-hour period.

-bses15 *SES15min*	Bipolar violation severely errored seconds during a 15-minute period.
-bses24 *SES24Hr*	Bipolar violation severely errored seconds during a 24-hour period.
-psefs15 *SEFS15min*	PLCP severely errored frame seconds during a 15-minute period.
-psefs24 *SEFS24Hr*	PLCP severely errored frame seconds during a 24-hour period.
-puas15 *UAS15min*	PLCP unavailable seconds during a 15-minute period.
-puas24 *UAS24Hr*	PLCP unavailable seconds during a 24-hour period.

Related Commands

dspalmcnf

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Configure the following thresholds for triggering a major line-level alarm on line 2 in bay 1:

- The *line type* is SONET line.
- The bay is 1, and the line number is 2.
- The severity of the triggered alarm is major.
- The errored seconds for a 15-minutes period and a 24-hour period are 60 and 600, respectively.
- The severely errored seconds for a 15-minutes period and a 24-hour period are 3 and 7, respectively.
- The code violations for a 15-minutes period and a 24-hour period are 75 and 750, respectively.
- The unavailable seconds for a 15-minutes period and a 24-hour period are 10 and 10, respectively

```
node4.1.AXSM.a > cnfalm -sonetline 1.2 -lnsev 2 -lnes15 60 -lnes24 600 -lnses15 3 -lnses24
7 -lncv15 75 -lncv24 750 -lnuas15 10 -lnuas24 10
```

Check the configuration by executing **dspalmcnf** for the line number and line type in this example.

```
MGX8850.1.AXSM.a > dspalmcnf -sonetline 1.2
  LineNum: 1.2
  Line Stat Alarm Severity: No Alarm
              15min Threshold    24hr Threshold
  Line  ESs :  60                 600
  Line  SESs:  3                  7
  Line  CVs :  75                 750
  Line  UASs:  10                 10
```

cnfapsln

Configure APS Line—AXSM, AXSM-E, AXSM-XG

Configures the APS parameters for a line (*working line*). Use the **cnfapsln** command after creating the line using the **addapsln** command.

See the description for the **addapsln** command for a detailed explanation of Automatic Protection Switching (APS).

Syntax

cnfapsln -w <*working line*> **-sf** <*SignalFaultBER*> **-sd** <*SignalDegradeBER*> **-wtr** <*Wait To Restore*> **-dr** <*direction*> **-rv** <*revertive*> **-proto** <*protocol*>

Note 1+1AnnexB operational mode is bi-directional, non-revertive, ITU protocol only.

Note On an AXSM, if the ArchMode configured by the **addapsln** command is 1+1–Annex B, only WTR (**-wtr**), SF BER (-sf), and SD BER (-sd) are configurable with the **cnfapsln** command.

Syntax Description

-w	Slot number, bay number, and line number of the active line to configure, in the format: *slot.bay.line* `Example: -w 1.1.1`
-sf	A number between 3 and 5 indicating the Signal Fault Bit Error Rate (BER), in negative powers of ten: • 3 = 10^{-3} • 4 = 10^{-4} • 5 = 10^{-5} `Example: -sf 3`
-sd	A negative power of 10 in the range 5–9 that indicates the Signal Degrade Bit Error Rate (BER): • 5 = 10^{-5} • 6 = 10^{-6} • 7 = 10^{-7} • 8 = 10^{-8} • 9 = 10^{-9} `Example: -sd 5`

-wtr	The number of minutes to wait after the working line has become functional again, before switching back to the working line from the protection line. • On AXSM/A and AXSM/B the range is 5–12. • On AXSM-E and AXSM-XG, the range is 1–12. `Example: -wtr 5`
-dr	Specifies the direction: 1: unidirectional, 2: bidirectional Example: **-dr 2** Bidirectional means that both the receiving and transmitting paths are switched. Unidirectional means that only the affected path, receiving or transmitting, is switched.
-rv	Enables revertive behavior. 1: non-revertive, 2: revertive Example: **-rv 1**
-proto	On the AXSM-E and AXSM-XG, you can specify either Telecordia or ITU protocol by following the -proto keyword with either a 1 or a 2. 1: Telecordia 2: ITU

Related Commands

addapsln, delapsln, dspapsln, dspapslns, switchapsln, dspapsbkplane, dspbecnt

Attributes

Log: yes	State: active	Privilege: SUPER_GP

Example

```
MGX8850.1.9.AXSME.a > cnfapsln -w 1.1.1 -sf 3 -sd 5 -wtr 5 -dr 2 -rv 1
```

cnfatlaslndiagstat

Configure Atlas Line Diagnostics Statistics—AXSM

Configure Atlas line diagnostics statistics according to the designated arguments. Enter a number to indicate the arguments as follows:

- 1—Non-compliant CLP=0 cells
- 2.—Non-compliant CLP=0+1 cells
- 3—Discarded CLP=0 cells
- 4—Discarded CLP=0+1 cells

Syntax

cnfatlaslndiagstat <*bay*> <*line*> <*arg1*> <*arg2*> <*arg3*>

Syntax Description

bay.line	Identifies the bay (1 or 2) in which the back card is installed.
line	Identifies the line number. The line number is from 1 to the highest numbered line on the back card.
arg1	Enter a number that indicates the argument you want to use to configure the Atlas line diagnostics statistics, in the range from 1 through 4.
arg2	Enter a number that indicates the argument you want to use to configure the Atlas line diagnostics statistics, in the range from 1 through 4.
arg3	Enter a number that indicates the argument you want to use to configure the Atlas line diagnostics statistics, in the range from 1 through 4.

Related Commands

cnfatlaslndiagstat, dspatlasdiagcnfcstat, dspatlasdiagcstat, dspatlasdiagstatcnf, dspatlaslndiagstat

Attributes

Log: yes	State: active	Privilege: SERVICE_GP

Example

Configure Atlas line diagnostics statistics for line 1 on the current back card in the top bay according to arguments 1, 2, and 3.

```
M8850_LA.1.AXSM.a > cnfatlaslndiagstat 1 1 1 2 3

M8850_LA.1.AXSM.a >
```

cnfatmimagrp

Configure ATM IMA Group—AXSM-32-T1E1-E

Allows you to enable or disable the ATM cell layer parameter, payload scrambling (*PayloadScramble*), for the specified IMA *group*.

Syntax

cnfatmimagrp -grp <*group*> **-sps** <*PayloadScramble*> [**-ais** <*aisMode*>]

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16
-sps	Enable or disable payload scrambling. • 1 = disable • 2 = enable Defaults: For T1 disabled. For E1 enabled.
-ais	Enables or disables the alarm indication signal (AIS) mode. The AIS is an all-ones signal that is transmitted instead of the normal signal to maintain transmission continuity and to indicate to the receiving terminal that there is a transmission fault that is located either at the transmitting terminal or upstream from the transmitting terminal. 1 – Enable AIS transmitting. 2 – Disable AIS transmitting.

Related Commands

dspatmimagrp

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.11.AXSME.a > cnfatmimagrp -grp 1.1 -sps 1

MGX8850.11.AXSME.a >
```

cnfatmlayer

Configure ATM Layer—AXSM-XG

Configures the ATM cell layer parameters on the specified path (*path_num*).

Note The *NullCellHdr* and *NullCellPayload* of the ATM cell layer are not configurable due to hardware limitations.

Syntax

cnfatmlayer <*path_num*> **-sps** <*PayloadScramble*>

Syntax Description

path_num	Identifies the path whose ATM cell layer parameters you want to configure. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.
-sps	Enables or disables payload scramble. 1–enable 2–disable

Related Commands

dspatmlayercnt

Attributes

Log: no	State: active	Privilege: GROUP1

Example

```
MGX8950.3.AXSMXG.a > cnfatmlayer 1.1.1 1
```

cnfatmln

Configure ATM Line—AXSM, AXSM-E, AXSM-32-T1E1-E

Configures the ATM layer cell header for a line.

You must configure the ATM layer cell header for a line before you activate the line using **upln** or before you add a logical port to the line using **addport**.

Syntax

cnfatmln -**ln** <*bay.line*> [-**hcs** <*HCS coset*>] [-**sps** <*PayloadScramble*>] [-**nch** <*cellhdr*>] -**ncp** [<*NullCell payload*>] [-**hcs** <*hcs*>] [**-ais** <*aisMode*>]

Syntax Description

-**ln**	This parameter specifies the bay and line number.
-**hcs**	Enables or disables the HCS coset. The default is enabled. • 1 – Disable HCS coset. • 2 – Enable HCS coset.
-**sps**	Enables or disables payload scrambling. The default value for *PayloadScramble* is enabled. The setting must be the same at both ends of the line and throughout the entire path. • 1 – Enable payload scrambling. • 2 – Disable payload scrambling.
-**nch**	Specifies the four-byte hexadecimal number to serve as the null cell header (*cellhdr*). The range for *cellhdr* is all 0s through fffffff.
-**ncp**	Specifies a 8-bit hexadecimal byte to serve as the null cell payload. The range for *cellpayload* is 1–ff. The default is 6a.
-ais	Enables or disables the alarm indication signal (AIS) mode. The AIS is an all-ones signal that is transmitted instead of the normal signal to maintain transmission continuity and to indicate to the receiving terminal that there is a transmission fault that is located either at the transmitting terminal or upstream from the transmitting terminal. • 1 – Enable AIS transmitting on failed line. • 2 – Disable AIS transmitting on failed line. **Note** This parameter is not available on AXSM/A cards.

Related Commands

dspatmln

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

For AXSM, line 1, bay 1, disable payload scrambling and specify a null cell header.

```
MGX8850.7.AXSM.a > cnfatmln -ln 1.1 -sps 2 -nch ab12abab
```

For AXSM, line 1, bay 1, enable payload scrambling and specify null cell headers.

```
MGX8850.1.AXSM.a > cnfatmln -ln 1.1 -sps 1 -nch 1a1a1a1a -ncp aa
```

For AXSM-E and AXSM-XG, line 1, bay 1, disable payload scrambling and specify a null cell header.

```
MGX8850.1.9.AXSME.a > cnfatmln -ln 1.1 -sps 2 -nch ab12abab
```

cnfautolndiag

Configure Auto Line Diagnostics—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Enables or disables auto line diagnostic on the card.

Syntax

cnfautolndiag <*enable* | *disable*>

Syntax Description

enable or disable	A numeric value indicates enable or disable: • 1 = enable • 2 = disable

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.10.AXSME.a > cnfautolndiag 1
```

cnfbert

Configure Bit Error Rate Test—AXSM-E, AXSM-XG, AXSM-32-T1E1-E

Configures the BERT *test pattern* for the given *bay.line*. BERT is the acronym for bit error rate test.

The new configuration will not take effect if the given BERT *test pattern* is already running on the given *bay.line*. However, it will take effect if the test is stopped and started again.

The BERT test patterns range from 1–32 and are described in Table 5-15.

Table 5-15 BERT Test Patterns

No.	Test Pattern	Description
1	allZeros	all zeroes (..0000..)
2	allOnes	all ones (..1111..)
3	altOneZero	alternate ones and zeros (..1010..)
4	doubleAltOnesZeros	double alternate ones and zeros (..1100..)
5	oneIn4	a four bit pattern containing a single 1
6	oneIn8	an eight bit pattern containing a single 1
7	oneIn16	a sixteen bit pattern containing *n* ones where *n* equals 1–16
8	threeIn24	a 24 bit pattern which contains 3 ones
9	inbandLoopup	D4/SF Loopback activate
10	inbandLoopdown	D4/SF Loopback deactivate
11	twoE3MinusOne	23 – 1 (7 bits)
12	twoE4MinusOne	24 – 1 (15 bits)
13	twoE5MinusOne	25 – 1 (31 bits)
14	twoE6MinusOne	26 – 1 (63 bits)
15	twoE7MinusOne	27 – 1 (127 bits)
16	twoE7MinusOneFT1Loopup	27 – 1 (fractional T1 loop back activate)
18	twoE9MinusOne	29 – 1 (511 bits with a maximum of 8 non-inverted sequential zeros and 9 sequential ones)
19	twoE10MinusOne	the 210 – 1 (1023 bits)
20	twoE11MinusOne	211 – 1 (2047 bits with a maximum of 15 inverted sequential zeros)
21	twoE15MinusOne	215 – 1 (32767 bits with a maximum of 15 inverted sequential zeros)
22	twoE17MinusOne	217 – 1 (131071 bits)
23	twoE18MinusOne	218 – 1 (262144 bits)
24	twoE20MinusOne	220 – 1 (1048575 bits with a maximum of 19 non-inverted sequential zeros)
25	twoE20MinusOneQRSS	220 – 1 (1048575 bits with zero suppression: a quasi-random signal source)
26	twoE21MinusOne	221 – 1 (2097151 bits)
27	twoE22MinusOne	222 – 1 (4194303 bits)

Table 5-15 BERT Test Patterns (continued)

No.	Test Pattern	Description
28	twoE23MinusOne	223 – 1 (8388607 bits:) the highest stress pseudo-random pattern with maximum of 23 inverted sequential zeros and 23 sequential ones
29	twoE25MinusOne	221 – 1 (33554431 bits)
30	twoE28MinusOne	228 – 1 (268435455 bits)
31	twoE29MinusOne	the highest stress pseudo random pattern with a maximum of 29 inverted sequential zeros
32	twoE31MinusOne	a maximum of 31 sequential zeros

Syntax

cnfbert -ln <*bay.line*> **-tp** <*test pattern*> **-tpi** <*transmit pattern inverse*>
-rpi <*receive patter inverse*> **-eir** <*error insertion rate*>

Syntax Description

-ln	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
-tp	The test pattern to configure. Range 1–32. See Table 5-15.
-tpi	Controls inversion of the transmit BERT pattern: 1 = Not inverted 2 = Inverted
-rpi	Controls inversion of the received BERT pattern: 1 = Not inverted 2 = Inverted
-eir	Inserts bit errors in the transmitted pattern at the following rates: 1 = noError(1): no errors 2 = oneInHundred: 1 bit error per 100 bits 3 = oneInThousand: 1 bit error per 1000 bits 4 = oneIn10Thousand: 1 bit error per 10000 bits 5 = oneInHundredThousand: 1 bit error per 100000 bits 6 = oneInMillion: 1 bit error per 1000000 bits 7 = oneInTenMillion: 1 bit error per 10,000,000 bits

Related Commands

stopbert, startbert

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.11.AXSME.a > cnfbert -ln 1.1 -tp 2 -tpi 1 -rpi 1 -eir 1

MGX8850.11.AXSME.a >
```

cnfcdmode

Configure Card Mode—AXSM-E, AXSM-32-T1E1-E

Specifies the type of the lines in use on the back card.

Note Use **cnfcdmode** only when the card is not provisioned.

Syntax

cnfcdmode <*mode*>

Syntax Description

mode	The type of lines used on the back card. • 1 = T1 • 2 = E1 • 3 = T3 (PXM-1E only) • 4 = E3 (PXM-1E only)

Related Commands

dspcd, **dspcds**

Attributes

Log: yes	State: active, standby	Privilege: GROUP1

Example

```
MGX8850.11.AXSME.a > cnfcdmode 1

MGX8850.11.AXSME.a >
```

cnfcdsct

Configure Card-Level Service Class Template—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Assign a service class template (SCT) to an AXSM at the card level. The template contains bandwidth and policing parameters for an AXSM and an AXSM-E or AXSM-XG.

Note Policing parameters apply only at the port, so specifying SCT 2 or SCT 4 does not provide a card-level policing function. (As this description states, Cisco provides SCTs 2 and 4 for the card.)

Note Currently, the system does not support certain parameters in the service class templates (SCTs), so you can specify them through **addcon**, **cnfcon**, or Cisco WAN Manager. These parameters are (when applicable) PCR, SCR, and ICR.

Usage Guidelines

The **cnfcdsct** command is card-level because it applies to the card's interface to the backplane. (See **addport** for specifying an SCT for a port.) The following characteristics apply to **cnfcdsct**.

- A valid SCT file must exist on the PXM45 disk before you execute **cnfcdsct**. To see a list of SCT files on the disk, execute **cd** to get to the SCT directory, then execute **ls** to see the directory named AXSM.
- You must use **cnfcdsct** only when the card is down.
- You cannot change the SCT configuration if any ports, lines, or partitions are configured.
- To see the ID of the current SCT, use **dspcd** for the card-level SCT or **dspport** for a port-level SCT.
- To see the actual contents of a card-level SCT, use the **dspcdsct** command.

Background

The node supports a template approach to specifying parameters for large numbers of connections. (If necessary, you can customize an individual connection by specifying the optional parameters in the **addcon** or **cnfcon** command.) The targets of SCT application are the card itself on the one hand and logical ports on the other. The **cnfcdsct** lets you specify an SCT for the card, and the **addport** command lets you specify an SCT for a port. You can specify the same or different SCT number for either the port or card-level, but you definitely need to specify an SCT for each card and port.

Cisco Systems provides SCT numbers 2, 3, 4, and 5. The high-level distinctions between these SCTs are as follows:

- SCT 2 contains policing parameters, but SCT 3 does not.
- SCT 4 contains policing parameters, but SCT 5 does not.
- If your network design includes eventual configuration of partitions for MPLS, you may need SCT 4 or 5 (or derivations of 4 or 5 that you create through Cisco WAN Manager).
- The AXSM-E and AXSM-XG requires SCT 4 or 5 (for ABR support) and cannot use SCT 2 or 3.

Cisco Systems provides SCTs 2 and 3 with Release 2.0. Additionally, it provides SCTs 4 and 5 with Release 2.1 Cisco Systems encourages users who have upgraded from 2.0 to 2.1 to use SCT 4 or 5 for new card and port configurations. For example, if MPLS is implemented, SCT 4 or 5 may be required.

The following two types of tasks may be helpful before you assign SCTs:

- To see the actual values in an SCT, use **dspportsct** for a port SCT or **dspcdsct** for a card-level SCT.
- To see a list of SCT files on the disk, use **cd** to reach the SCT directory, then use **ls** to display the contents of the AXSM directory. See the Example section for an illustration of this task.

You should use the provided SCTs or create new templates by using Cisco WAN Manager to modify the provided SCTs and saving them with new IDs.

Until you specify an SCT, the AXSM has a default SCT of 0. The system uses SCT ID = 0 when:

- The AXSM is powered-up for the first time.
- The card's database is rebuilt.
- The card is rebooted and the user-specified SCT file for a particular port is corrupt or missing. In this situation, the default applies to only the affected port.

Syntax

cnfcdsct <*SCT-id*>

Syntax Description

SCT-id	Number of the SCT at the card-level. The range is 1–255.

Related Commands

dspcdsct, **dspcd**, **dspsct**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Configure SCT 5 for the card. If this configuration is the first time you are specifying a card-level SCT on the switch, you might confirm the existence of the SCT files on disk.

```
MGX8850.7.PXM.a > pwd
C:

MGX8850.7.PXM.a > cd C:\SCT

MGX8850.7.PXM.a > ls AXSM
..
AXSM_SCT.CARD.2
AXSM_SCT.CARD.3
AXSM_SCT.CARD.4
AXSM_SCT.CARD.5
AXSM_SCT.PORT.2
AXSM_SCT.PORT.3
AXSM_SCT.PORT.4
AXSM_SCT.PORT.5

In the file system :
    total space :  819200 K bytes
    free  space :  624494 K bytes
```

The SCT file must reside on the PXM disk before you use this command, or it fails and displays the error message in the following example:

```
MGX8850.1.6.AXSM.a > cnfcdsct 55
ERR:SCT file not present. Use tftp to load it on PXM disk
Set failed due to illegal option value(s)

Syntax: cnfcdsct "<sctID>"
        sctID -- SCT file id between 0 and 255

MGX8850.1.6.AXSM.a > cnfcdsct 5
```

cnfcdstat

Configure Card Statistics—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Configures the TFTP bucket statistics. This command allows the user to change the statistics configuration for the card. Part of the configuration controls the *bucket interval* and the *collection interval*. These parameters are used to control the generation of files (that contain statistics) that are transferred to the Cisco WAN Manager (CWM) using the FTP protocol.

The card statistics level (*stats level*) cannot be set if there is any configuration on the lines, such as logical ports. You must set the *stats level* before you can add any logical ports. However, you can set the *bucket interval* and the *collection interval* after you have added logical ports.

Statistical alarms are different than integrated alarms. An integrated alarm indicates a persistent traffic loss at either the local end, such as the LOS and LOF alarms, or at the remote end, such as the RDI alarm.

A statistical alarm indicates that a statistical counter has exceeded the threshold for alarm indication. For instance, the Severely Errored Seconds (SES) counter might exceed the corresponding 15-minute threshold. For this condition, a statistical alarm is raised, which indicates a degraded performance that is not due to persistent traffic loss.

Statistical alarms are based on fixed statistics collection intervals. There are two types of fixed statistics collection intervals:

- 15-minute
- 24-hour

The start of an interval is aligned to the time of day. For instance, 11:15, 11:30, 11:45, and so on. At the end of the interval, the corresponding statistical alarms are cleared. An alarm is raised again if a counter exceeds the threshold during the new interval.

Types of Card Statistics

The types of card statistics that are reported, and at which levels, are shown in the following tables.

Table 5-16 Statistics Port to Backplane Ingress per Connection

Statistic	Level 2	Level 3
All Cells from the port (before policer)	yes	yes
CLP0 cells from port (before policer)	yes	yes
CLP1 cells from port (before policer)	yes	yes
CLP0 non compliant cells	yes	yes
CLP1 non compliant cells	yes	yes
Total non compliant cells	yes	yes
VC queue depth (scheduled conns only)	yes	yes
VS/VD ACR (scheduled conns only)	yes	yes
EFCI = 1 cells from the port	yes	yes
EOF = 1 cells from the port	yes	yes
Rm cells from the port (RM cells after the policer stats level3, RM cells queued for stats level2)	yes	yes
OAM cells from port	no	yes
All cells to the backplane	yes	yes

Table 5-16 Statistics Port to Backplane Ingress per Connection (continued)

Statistic	Level 2	Level 3
CLP0 cells to the backplane	yes	yes
CLP1 cells to the backplane	yes	yes
EFCI = 1 cells to the backplane	yes	yes
Rm cells to the backplane	no	yes
OAM cells to the backplane	no	yes
All cells discarded due to queue overflow	yes	yes
CLP0 cells discarded due to queue overflow	yes	yes
CLP1 cells discarded due to queue overflow	yes	yes
EOF = 1 cells discarded due to queue overflow	yes	yes
EFCI = 1 cells discarded due to queue overflow	yes	yes
RM cells discarded due to queue overflow	no	yes
OAM cells discarded due to queue overflow	no	yes

Table 5-17 Statistics Backplane to Port Egress per Connection

Statistic	Level 2	Level 3
All cells to the port	yes	yes
CLP0 Cells to Port	yes	yes
CLP1 Cells to Port	yes	yes
VC queue depth (scheduled conns only)	yes	yes
VS/VD ACR (scheduled conns only)	yes	yes
EFCI = 1 cells to the port	yes	yes
EOF = 1 cells to the port	yes	yes
Rm cells to the port	yes	yes
OAM cells to the port	no	yes
All cells from the bus	yes	yes
CLP0 cells from the bus	yes	yes
CLP1 cells from the bus	yes	yes
EFCI = 1 cells from the bus	yes	yes
Rm cells from the bus	no	yes
OAM cells from the bus	no	yes
All cells discarded due to queue overflow	yes	yes
CLP0 cells discarded due to queue overflow	yes	yes
CLP1 cells discarded due to queue overflow	yes	yes
EOF = 1 cells discarded due to queue overflow	no	no
EFCI = 1 cells discarded due to queue overflow	yes	yes

Table 5-17 Statistics Backplane to Port Egress per Connection (continued)

Statistic	Level 2	Level 3
RM cells discarded due to queue overflow	no	yes
OAM cells discarded due to queue overflow	no	yes

Syntax

cnfcdstat -i <*bucket interval*> **-ci** <*collection interval*> **-sl** <*stats level*> **-ed** <*enable/disable*>

Syntax Description

:

-i	Stats Bucket Interval -- five : 5 minutes, ten :10 minutes, fifteen : 15 minutes, twenty : 20 minutes, thirty : 30 minutes, sixty : 60 minutes.
-ci	Statistic Collection Interval -- one : 1 minutes, five : 5 minutes , default : 0 (Collection interval is same as bucket interval)
-sl	Card Stats Level -- 1: level 1, 2: level 2, 3: level 3. The **-sl** option is not supported on AXSM-E cards.
-ed	Bucket stats-- 1:enable, 2:disable

Related Commands

dspcdstatcnf

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.1.9.AXSME.a > cnfcdstat -i fifteen -ci one -sl 1 -ed enable
```

cnfcellfilter

Configure Cell Filter—AXSM

Use the **cnfcellfilter** command to configure the cell filter on the current AXSM.

Syntax

cnfcellfilter

Syntax Description

None.

Related Commands

None

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Configure the cell filter for the current AXSM.

```
M8850_LA.1.AXSM.a > cnfcellfilter

M8850_LA.1.AXSM.a >
```

cnfchandbg

Configure Channelized Debugging —AXSM

Enables channelized debugging for the specified channel on the current AXSM.

Syntax

cnfchandbg <*ifNum*> <*vpi*> <*vci*> <*dbgLevel*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 60.
vpi	Virtual path identifier in the range 0–255 (UNI) or 0–4095 (NNI or VNNI).
vci	Virtual connection identifier (VCI): • For a VCC on a UNI, the range is 1–4095. On an NNI or VNNI, the VCI range is 1–65535. For MPLS, the recommended minimum VCI is 35. • For a VPC, the *vci* is 0.
dbgLevel	Level of statistics debugging to be performed: • 0 = disable • 1 = coreStats • 2 = detailedStats

Related Commands

clrchandbg, **dspchandbgcnf, dspchandbgcnt**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Enable level 1 (core) channelized debugging on logical interface (or port) 11, vpi 0, vci 0. Enter the **dspchandbgcnt** command to display the channel counters for logical interface (or port) 11, vpi 0, vci 0.

```
M8850_NY.1.AXSM.a > cnfchandbg 11 0 0 1

M8850_NY.1.AXSM.a > dspchandbgcnt 11 0 0
                                          Ingress         Egress
Instantaneous Qdepth:                        0              0
Arr CLP0 EFCI0 cells:                      233            233
Arr CLP0 EFCI1 cells:                        0              0
Arr CLP1 EFCI0 cells:                        0              0
Arr CLP1 EFCI1 cells:                        0              0

Dep CLP0 EFCI0 cells:                      233            233
Dep CLP0 EFCI1 cells:                        0              0
Dep CLP1 EFCI0 cells:                        0              0
Dep CLP1 EFCI1 cells:                        0              0
```

```
Detailed stats not enabled

M8850_NY.1.AXSM.a >
```

cnfcli

Configure CLI—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **cnfcli** command is the CLI portion of a feature that lets you modify the user privilege (or access) level of one or more commands. For a significant number of commands, you cannot modify the privilege, and a list of these commands appears in the “Restrictions” section of this command description. This command converts an ASCII text file with privilege changes to a binary file and applies it to the commands whose privilege you have changed.

The ASCII file is created on a workstation by using “vi” or any other text editor. Subsequently, you FTP the file to a TEMP directory on the node.

On the active AXSM, the **cnfcli** command can do one of two separate tasks according to the parameters:

- It can convert the ASCII file to a binary file then install the new command access levels.
- It can direct the switch to revert to the default privilege levels.

The following list describes details for this feature.

- The feature supports one ASCII file per switch. This file contains commands for the whole node and all card types and any changed privileges. Use FTP to copy this file to the switch.
- When you modify a command privilege through this feature, commands with the same name receive the same access level on all card types.
- The binary file is protected by an authentication signature generated from the binary file through a 64-bit key DES authentication encryption algorithm.
- The installed changes are persistent. The binary file is saved on the active AXSM hard disk and replicated on the standby AXSM hard disk during installation.
- If you cause privileges to revert to the original, default privileges, this change is not persistent.
- If you add an AXSM after modifying command privileges, the installed card automatically takes the privileges from the binary file on disk when the card comes up.
- For privilege changes to become effective when a card comes up, the binary modification file must reside on disk. If the file does not exist on the disk or the computed authentication signature does not match that of the file when you run cnfcli, the switch uses the default command access levels.
- The following commands are also relevant to this feature:
  - The **saveallcnf** command saves the binary file.
  - The **restoreallcnf** command restores the saved binary file.
  - The **clrallcnf** command deletes the binary file.

Restrictions

This section lists the restrictions on the use of the **cnfcli** command.

- You cannot change a command's privilege level to CISCO_GP.
- Only the switch software can generate the binary file. Any manual changes invalidate the file.
- If the binary file becomes corrupt, the command access levels revert back to the defaults during card bring-up. To recover, repeat the installation process.
- The switch verifies command names in the ASCII file against the unchangeable commands listed in this section, but an invalid command name you enter in the ASCII file could be parsed and added to the binary file. The switch would ignore this invalid name.

The following list shows the commands whose privilege you cannot change

Syntax

With a single iteration of the **cnfcli** command, you can either install the file with modified privilege levels or direct the switch to revert to the default privilege levels. The possible sequences of this command and its parameters are as follows:

cnfcli <*accesslevel*> <**install**> [*full path file name*]

cnfcli <*accesslevel*> <**default**>

Syntax Description

accesslevel	The access level is a subcommand.
install	Keyword that indicate Enter the keyword, **install,** followed by the full path to the ASCII file, as shown in the following example: `install`
full path file name	The full path name of the ASCII file you want to install.
default	Keyword that causes the system to revert to the default access levels. Do not enter **default** with the install keyword or the <*full path file name*>.

Related Commands

ftp, dspcli

Attributes

Log: yes	State: active, standby	Privilege: GROUP1

Example

Configure the system to revert to the default access levels.

```
MGX8850.11.AXSME.a > cnfcli accesslevel default

MGX8850.11.AXSME.a >
```

cnfcon

Configure Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Modifies the bandwidth, policing, and routing parameters of an existing endpoint. This command applies to only an SPVC or SPVP.

Note Use the **cnfabr** command to configure VSVD-specific parameters for ABR connections on AXSM-E and AXSM-XG cards. The **cnfabr** command is not available on AXSM/A and AXSM/B cards.

The command parameters consist of:

- A logical port, VPI, and VCI to identify the connection
- Bandwidth parameters for the local (master) end then the remote (slave) end
- Policing parameters for the connection as a whole

After you specify the mandatory connection identifier, all other parameters are optional.

Note To enable VS/VD, or to modify a connection which has VS/VD enabled, ABR COSB WFQ should be enabled in port SCT.

Warning **Changing connection parameters will result in a momentary loss of traffic.**

Warning **Changing routing parameters will not take effect on the slave endpoint of a DAX connection.**

Usage Guidelines

The following sections discuss the application of certain **cnfcon** parameters.

Note On DAX connections, using **cnfcon** at the slave end has no effect. For DAX connections, use **cnfcon** at the master end only, and the parameters will take effect on the controller as well.

If you modify a point-to-point (P2MP) connection, all parties on that connection are re-routed. The “Cast-type” field in the **dspcon** output shows whether the connection is P2P or P2MP.

Traffic Parameters

Traffic parameters such as PCR, SCR, MBS are entered at both the master and slave endpoints for both the forward and reverse directions. For PCR in the **cnfcon** command, however, specify *lpcr* and *rpcr* at the master endpoint only (the connection manager ignores PCR entries at the slave end for the **cnfcon** command). Be sure that the value entered as “local” on one end is equal to the value entered as “remote” on the other end. For example, the *lpcr* on the slave endpoint should be same as the *rpcr* on the master endpoint and vice versa when you provision the connection at the other end. If you modify traffic parameters after creating an SPVC, you just modify them at either the master endpoint or the slave endpoint.

Traffic parameters such as CDV, CTD are entered at both the master and slave endpoints for both the forward and reverse directions. However, the values of these parameters entered at the slave end are ignored during call setup. Therefore, you can specify the *lcdv*, *rcdv*, *lctd,* and *rctd* options at the master end only.

Routing Parameters

Routing parameter, such as maximum route cost (-**mc** *maxcost*) or the routing priority (-**rtngprio** *routingPriority*) need to be entered at the master endpoint only. The values of the parameters entered at the slave end are ignored during call setup.

You can assign a priority at the master end of an SPVC or SPVP. The PNNI controller routes higher priority connections before lower priority connections. The user-configurable range for a connection is, in descending order of priority, 1–15. The default is 8. See **cnfpri-routing** for a detailed description of the Priority Routing feature. Also, the **cnfpri-routing** command lets you configure groups of bandwidth so that the order of routing also reflects the bandwidth requirements of the connection.

If you use the **cnfcon** command to modify *only* the routing priority of a connection, PNNI does not immediately re-route the connection. Nevertheless, if you run **dspcon** for such a changed connection at the master endpoint, it immediately shows the changed priority even before PNNI re-routes the connection. You can also use the **dsppncon** command to see the priority of the SVC portion that is associated with master and slave endpoints. Note that the **dsppncon** command shows the new priority only after PNNI re-routes the connection.

Frame Discard

For *frame discard* (see -**frame** option), specify this parameter for VCCs only and only at the master endpoint. This parameter has no meaning at the slave end. Both early packet discard (EPD) and partial packet discard (PPD) are supported. If you do not specify *frame discard* here, the connection manager uses the frame discard flag in the operational SCT. The EPD on the QE depends on the thresholds in the SCT for the port. If the cells arriving in the COSB exceed the threshold and are dropped, the whole frame is dropped.

Local-Only Parameters

The parameters CDVT, stats enable, *cc* enable (specified using -**cdvt**, -**stat**, -**cc**) are significant only at the endpoint where you enter them. Therefore, they can be different at each end of the connection.

Syntax

cnfcon <*ifNum*> <*vpi*> <*vci*> [**-lpcr** <*local to remote PCR*>] [**-rpcr** <*remote to local PCR*>] [**-lscr** <*local to remote SCR*>] [-**rscr** <*remote to local SCR*>] [**-lmbs** <*local to remote MBS*>] [**-rmbs** <*remote to local MBS*>] [**-lcdv** <*local to remote maxCDV*>] [**-rcdv** <*remote to local maxCDV*>] [**-lctd** <*local to remote maxCTD*>] [**-rctd** <*remote to local maxCTD*>] [-**cc** <*OAM CC Cnfg*>] [**-lmcr** <*local to remote MCR*>] [**-rmcr** <*remote to local MCR*>] [**-cdvt** <*local CDVT*>] [**-cc** <*OAM CC Cnfg*>] [**-stat** <*Stats Cnfg*>] [**-frame** <*frame discard*>] [**-mc** <*Max Cost*>] [**-segep** <*OAM segment endpoint*>] [-**lputil** <local>] remote *PUtil*>] [-**rputil** <remote -> local *PUtil*>] [-**rtngprio** <*routingPriority*>] [**-prefrte** <*preferredRouteId*>] [**-directrte** <*directRoute*>]

Syntax Description

ifNum	Logical interface (or port) number. The ranges are as follows: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	Virtual path identifier in the range 0–255 (UNI) or 0–4095 (NNI or VNNI).
vci	Virtual connection identifier (VCI): • For a VCC on a UNI, the range is 1–4095. On an NNI or VNNI, the VCI range is 1–65535. For MPLS, the recommended minimum VCI is 35. • For a VPC, the *vci* is 0.
-lpcr	Specifies the peak cell rate (PCR) from the local endpoint to the remote endpoint. PCR is the maximum cell rate for the connection at any time. The range is 7–5651328 cells per second. **Note** For the **cnfcon** command, the switch uses *lpcr* and *rpcr* at the master endpoint only. If you specify *lpcr* and *rpcr* at the slave endpoint, they are ignored.
-rpcr	Specifies the peak cell rate (PCR) from the remote endpoint to the local endpoint. PCR is the maximum cell rate for the connection at any time. The range is 7–5651328 cells per second. **Note** For the **cnfcon** command, the switch uses *lpcr* and *rpcr* at the master endpoint only. If you specify *lpcr* and *rpcr* at the slave endpoint, they are ignored.
-lscr	Specifies the sustained cell rate (SCR) from the local endpoint to the remote endpoint. SCR is the maximum cell rate that a connection can sustain for long time periods. The range is 7–5651328 cells per second.
-rscr	Specifies the sustained cell rate (SCR) from the remote endpoint to the local endpoint. SCR is the maximum cell rate that a connection can sustain for long time periods. The range is 7–5651328 cells per second.
-lmbs	Specifies the maximum burst size (MBS) from the local endpoint to the the remote endpoint. MBS is the maximum number of cells that can burst at the PCR and still be compliant. The range is 1–5000000 cells
-rmbs	Specifies the maximum burst size (MBS) from the remote endpoint to the local endpoint. MBS is the maximum number of cells that can burst at the PCR and still be compliant. The range is 1–5000000 cells.
-cdvt	Specifies the cell delay variation tolerance (CDVT) from the local endpoint to the remote endpoint. CDVT controls the time scale over which the PCR is policed. The range is 1–5000000 microseconds. **Note** No remote CDVT is necessary.
-lcdv	Specifies the peak to peak cell delay variation (CDV) from the local endpoint to the remote endpoint. The range is 1–16777215 microseconds. To revert to the default value, enter a –1.
-lctd	Specifies the cell transfer delay (CTD) from the local endpoint to the remote endpoint. The range is 0–65535 microseconds. To revert to the default value, enter a –1.

-rctd	Specifies the cell transfer delay (CTD) from the remote (destination) endpoint to the local (source) endpoint. The range is 0–65535 microseconds. Default: –1 (To revert to the default value, enter a –1.)
-lmcr	Local to remote minimum cell rate. Range: 7–5651328 cells per second.
-rmcr	Remote to local minimum cell rate. Range: 7–5651328 cells per second.
-rcdv	Specifies the peak to peak cell delay variation (CDV) from a remote endpoint to a local endpoint. The range is 1–16777215 microseconds. Default: –1 (To revert to the default value, enter a –1.)
-cc	Operations, administration, and maintenance continuity check (OAM CC): • 1: enable • 0: disable Continuity checking involves a round trip of an OAM cell simply to confirm that both directions of the connection are intact. To provision continuity checking, enable this function at both ends of the connection, otherwise a connection alarm results. When you add a connection and include this parameter, the connection goes into alarm until both ends of the connection are added. Note that a non-zero AIS delay timer affects CC functionality (if enabled) during the intentional re-routing of a connection following the **optrte** or **cnfrteopt** command. (See the **cnfaisdelaytimer** description for details of this AIS-delay feature.) If the delay timer is configured and the connection is groomed, the switch turns of CC until the connection is re-routed. Default: 0
-stat	This optional parameter enables or disables statistics collection: • **1** = enable • **0** = disable Default: 0 (disabled) The Cisco WAN Manager tool collects statistics for a connection if you enable it here. Statistics collection is disabled for all connections by default. Statistics collection has varying impact on the real-time response, especially for SVCs (which can be affected even though you do not add SVCs). The impact may be small. You should enable statistics collection for only that subset of connections that really warrants it. **Note** This option applies to AXSM/A and AXSM/B cards only. The AXSM-E and AXSM-XG cards ignore the **-stat** option, as statistics collection is automatically enabled on these cards until the max level supported for a specific statistics configuration is reached.
-frame	This optional parameter lets you enable or disable frame discard for VCCs (no VPCs). Note that you can use it at only the master endpoint of a connection. Possible values: • 1 to enable • 0 to disable Default: 0 (disabled)

-mc	The maximum cost (*maxcost*) creates a routing priority. (PNNI does not use a route if the *cost* for the route exceeds the *maxcost*.) If you do not specify this optional parameter, the connection defaults to having the highest routing priority. Therefore, the *maxcost* parameter lets you *lower* the priority of a connection—but only in regards to finding a route for it. The range for *maxcost* is 0–4294967295, and the default is 4294967295. The *cost* of a *route* (not the *maxcost* of the *connection*) depends on a *cost-per-link* specified through the **cnfpnni-intf** command. The cost-per-link applies at the egress of a port for all connections of a particular service type. For example, the cost-per-link is the same for all VBR.1 connections that PNNI controls on a given port, but this cost can differ from all UBR.1 connections on the same port. For a route under consideration, the cost is the sum of all the costs-per-link at each egress in the forward and backward directions along the entire route. In a one-link route, for example, the cost is the sum of the cost-per-links at two ports. To illustrate further with a four-link route: 1. You specify a *maxcost* of 100000. 2. A route under consideration by PNNI has four links for a total of eight egress points. 3. The cost-per-link at six of the ports is 5040 (the default in **cnfpnni-intf**), and the cost per link at two ports is 10000. The node would use the route because the resulting cost of 50240 is less than the *maxcost* of 100000. Default: 4294967295 **Note** To return maxcost to the default, type -mc 4294967295. Setting maxcost to this value makes maxcost meaningless and causes PNNI to ignore this metric when making routing decisions.
-segep	OAM segment endpoint: Enter a 1 to enable or a 0 to disable.
-lputil	Local Percentage Utilization Range: 1–100 Default: 100
-rputil	Remote Percentage Utilization Range: 1–100 Default: 100
-rtngprio	The routing priority for the connection. Range: 1–15. 0 is reserved for control connections, and 1 is reserved for IP to CWM. Default: 8

-prefrte	This option modifies the preferred route association to the connection. Use this optional parameter at the master endpoint only. See the **addpref** description for details about the preferred route feature. To *disassociate* a connection from a route, type a 0 for this parameter. **Note** An SPVC can be associated with one preferred route. For an XPVC, you can associate the preferred route with only the SPVC portion of the XPVC. Range: 0–65535 Default: 0
-directrte	This parameter specifies whether the connection can take *only* the preferred route associated through the **-prefrte** parameter. Use this optional parameter at the master endpoint only. To remove the directed route requirement from the connection, specify a 0 for this parameter. The possible values are as follows: • 1: yes (make the preferred route required) • 0: no (do not require the connection to take the preferred route) Default: no (0)

Related Commands

addcon, **delcon**, **dspcon**, **dspcons**, **dspconstats**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Enable OAM CC in the connection with a VPI and VCI of 10 40 on interface 1.

```
MGX8850.1.11.AXSM.a > cnfcon 1 10 40 -cc 1
Configuration successful
```

Assign a routing priority of 3 to the connection with a VPI and VCI of 102 and 102, respectively, on interface number 1. Check the result by using the **dspcon** command first on the AXSM then on the PXM.

```
MGX8850.3.AXSM.a > cnfcon 1 102 102 -rtngprio 3
Configuration successful

MGX8850.3.AXSM.a > dspcon 1 102 102
-------------------------------------------------------------------------
Local    :                 NSAP  Address                     vpi       vci
(M)       47009181000001000 01A531C2A00000103180100        102       102
Remote  :                  NSAP  Address                     vpi       vci
(S)       4700918100000200036B5E30CD00000101180200         102       102
-------------------------------------------------------------------------
Conn. Type     :        VCC                       Admn Status  :    ADMN-UP
Service Type   :       cbr1                       Oper Status  :       FAIL
Controller     :          2                       Record #     :          0
SlavePersist   :        YES
-------------------------------------------------------------------------
Local PCR      :         50                       Remote PCR    :         50
Local SCR      :        N/A                       Remote SCR    :        N/A
Local CDV      :         -1                       Remote CDV    :         -1
Local CTD      :         -1                       Remote CTD    :         -1
Local MBS      :        N/A                       Remote MBS    :        N/A
Max Cost       :         -1                       Frame discard:   DISABLED
Local CDVT     :     250000                       OAM segment  :    ENABLED
Local PercentUtil:        100                Remote PercentUtil:        100
Priority       :          3

MGX8850.8.PXM.a > dspcon 3:1.1:1 102 102
Port                   Vpi Vci             Owner      State      Persistency
---------------------------------------------------------------------------
Local  3:1.1:1         102.102             MASTER     FAIL       Persistent
       Address: 47.00918100000100001a531c2a.000001031801.00
       Node name: MGX8850
Remote Routed          102.102             SLAVE       --        Persistent
       Address: 47.00918100000200036b5e30cd.000001011802.00
       Node name:

-------------------- Provisioning Parameters --------------------
Connection Type: VCC          Cast Type: Point-to-Point
Service Category: CBR         Conformance: CBR.1
Bearer Class: BCOB-X
Last Fail Cause: unallocated (unassigned) number        Attempts: 20055
Continuity Check: Disabled    Frame Discard: Disabled
L-Utils: 100   R-Utils: 100   Max Cost: -1    Routing Cost: 0
OAM Segment Ep: Enabled
Priority: 3
```

cnfcosbdbg

Configure COS Debugging Counters—AXSM

Enable class of service buffer (COSB) debugging counters for the specified logical interface (or port) on the current AXSM.

Syntax

cnfcosbdbgcnt <*ifNum*> <*cosb*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 64.
cosb	Class of service buffer (COSB) identifier, in the range from 1 through 16.

Related Commands

clrcosbdbgcnt, **dspcosbdbgcnf, dspcosbdbgcnt**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Enable COSB 16 counters on logical interface (or port) 11, and then enter the **dspcosbdbgcnf** command to verify that COSB 16 is enabled on port 11.

```
M8850_NY.1.AXSM.a > cnfcosbdbg 11 16 1

M8850_NY.1.AXSM.a > dspcosbdbgcnf
port     CosB
 11       16
```

cnfilmi

Configure ILMI—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Configures the card-level interim local management interface (ILMI) for the AXSM. Activating the card-level ILMI through **cnfilmi** requires a pre-existing logical port (see **addport**) and resource partition (see **addrscprtn** or **addpart**). No response appears unless an error occurs.

Note For network-level ILMI in relation to PNNI, run the PNNI-specific ILMI commands on the PXM45.

Syntax

cnfilmi -if <*ifNum*> **-id** <*partitionID*> [**-ilmi** <*ilmiEnable*>] [**-vpi** <*vpi*>] [**-vci** <*vci*>] [**-trap** <*ilmiTrapEnable*>] [**-s** <*keepAliveInt*>] [**-t** <*pollingIntervalT491*>] [**-k** <*pollInctFact(K)*>]

Syntax Description

-if	Logical interface number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-id	Partition ID in the range 1–20. (See description of **addpart** or **addrscprtn** for information regarding resource partition ID.)
-ilmi	Enable or disable ILMI. 1 = enable. 2 = disable.
-**vpi**	VPI for the ILMI signaling connection. The range is 0–255. For AXSM-XG, the range is 1–4095 (for NNI ports).
-vci	VPI for the ILMI signaling connection. The range is 0–65535.
-trap	Enable or disable ILMI trap. 1 = enable. 2 = disable.
-s	Keep alive interval. The range is 1–16 seconds.
-t	Polling interval for T491 in the range 0–255 seconds.
-k	Polling interval K in the range 0–255 seconds.

Related Commands

dspilmi, **dspilmis**, **dspilmicnt**, **clrilmicnt**, **dnilmi**, **upilmi**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.1.AXSM.a > cnfilmi 1 1 -ilmi 1 -vpi 40 -vci 99 -s 10 -t 10 -k 10
```

cnfimagrp

Configure IMA Group—AXSM-32-T1E1-E

This command configures one or more of the attributes of an IMA group. Modifying any of the attributes causes the IMA group to restart.

Syntax

cnfimagrp <**-grp** *group*> [**-ver** <*version*>] [**-txm** <*minLinks*>] [**-txid** <*txImaId*>] [**-txfl** <*txFrameLen*>] [**-dd** <*diffDelayMax*>] [**-uptim** <*groupUpTime*>] [**-dntim** <*groupDownTime*>] [**-vfb** <*verFallback*>] [**-mode** <*autoRestart*>] **-rxid** <*rxImaIdExpected*>]

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16
version	The protocol version of the IMA group. 1 = IMA version 1.0 2 = IMA version 1.1
minLinks	The minimum number of links that will allow the IMA group to be operational (Range: 1–16). The *minLinks* value is configurable ONLY for IMA version 1.1. For IMA version 1.0, the *minLinks* value is always 128.
txImaId	The IMA ID number transmitted in the IMA ID field of the ICP cell (Range: 0–255).
txFrameLen	The length of transmitted IMA frame in megabytes. For IMA version 1.0, the *txImaFrameLength* value is always 128. For version 1.1, the *txImaFrameLength* value can be 32, 64, 128, or 256.
diffDelayMax	The maximum differential delay in milliseconds (Range: 1–279). Defaults: T1 = 275 E1 = 220
groupUpTime	The group up time. Range: 0–400000 milliseconds. Default: 10000.
groupDownTime	The group down time. Range: 0–100000 milliseconds. Default: 2500.
verFallback	Enables/disables version fallback on the IMA group. Enter 1 to enable version fallback on the specified IMA group, or 2 to disable version fallback on the specified IMA group. **Note** You must set version fallback on the card level with the **cnfimaparms** -fallback <*1*|*2*> command before you set it for each individual IMA group with the **cnfimagrp -vfb** <*1*|*2*> command.
autoRestart	Enables, disables, or re-uses IMA auto restart functionality for the current group. Enter **1** to disable IMA auto-restart. Enter **2** to relearn IMA auto-restart, or enter **3** to reuse a previous IMA auto-restart.
rxImaIdExpected	Identifies the expected received IMA ID. The IMA Id is a number in the range from -1 through 255.

Related Commands

addimagrp, delimagrp, dspimagrp, dspimagrps, rstimagrp, dspimalnk

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.2.AXSME.a > cnfimagrp 1.16 -min 128 -id 255 -txm 128 -rxm 128 -dd 276
```

cnfimalnk

Configure IMA Link—AXSM-32-T1E1-E

The **cnfimalnk** command lets you configure LIF and LODS integration timers for an IMA link.

Syntax

cnfimalnk -**lnk** <*link*> **-uplif** <*lifUpTime*> **-dnlif** <*lifDnTime*> **-uplods** <*lodsUpTime*> **-dnlods** <*lodsDnTime*>

Syntax Description

link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16
lifUpTime	LIF integration up time. Range: 0–400000 milliseconds. The LIF (Loss of IMA Frame) defect is the occurrence of persistent OIF (Out of IMA Frame) anomalies for at least 2 IMA frames.
lifDnTime	LIF integration down time. Range 0–100000 milliseconds. The LIF (Loss of IMA Frame) defect is the occurrence of persistent OIF (Out of IMA Frame) anomalies for at least 2 IMA frames.
lodsUpTime	LODS integration up time. Range: 0–400000 milliseconds. The LODS (Link Out of Delay Synchronization) is a link event indicating that the link is not synchronized with the other links within the IMA group.
lodsDnTime	LODS integration down time. Range 0–100000 milliseconds. The LODS (Link Out of Delay Synchronization) is a link event indicating that the link is not synchronized with the other links within the IMA group.

Related Commands

addimagrp, **cnfimagrp**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
M8850_LA.12.AXSME.a > cnfimalnk -lnk 1.1 -uplif 20000 -dnlif 20000

M8850_LA.12.AXSME.a >
```

cnfimalnktst

Configure IMA Link Test—AXSM-32-T1E1-E

Allows you to change the link number or the test pattern number during an active IMA link connectivity test on the specified IMA *group*. You check that an IMA link connection is valid by sending a *test pattern* to the *link*. The test pattern is a number in the range of -1–255. If the test pattern number is the same when it arrives at the receive endpoint of the link, then the link is valid. If the test pattern number is different or does not arrive at all, then the link is invalid.

Syntax

cnfimalnktst -grp <*group*> **-lnk** <*link*> **-pat** <*testPat*>

Syntax Description

-grp	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16
-link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16
-pat	The test pattern number. Range: -1–255. • -1 causes the program to choose its own pattern. • 255 causes the link test to stop.

Related Commands

startimalnktest, stopimalnktest

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Change the link to 3 and the test pattern to 2 on IMA group 1.1:

```
MGX8850.2.AXSME.a> cnfimalnktst 1.1 3 2
```

cnflmitrace

Configure Local Management Interface Trace—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **cnflmitrace** command to configure the Local Management Interface (LMI) trace feature on the specified logical trunks.

Syntax

cnflmitrace <*BufWrap*> <*TrcEnable*> <*FuncCode*> <*Ltrk*> <*Dir*>

Syntax Description

BufWrap	Enables or disables buffer wrap around on the trace. Enter **yes** to enable buffer wrap around, or **no** to disable buffer wrap around.
TrcEnable	Enables or disables the trace feature. Enter **yes** to enable the trace feature, or **no** to disable the trace feature.
FuncCode	String of function codes in HEX separated by comma.
Ltrk	String of trunk numbers in HEX separated by comma.
Dir	The direction to be traced. Enter **T** to trace indicate the transmit direction, or **R** to indicate the receive direction. Enter * if you want the trace to be performed in both the transmit and receive directions.

Related Commands

clrlmitrace, **cnflmitrace**, **dsplmitrace**

Attributes

Log: yes	State: active, standby	Privilege: CISCO_GP

Example

Enable the LMI buffer wrap around and trace feature for both directions.

```
MGX8850.1.AXSM.a > cnflmitrace Yes Yes 0x1A,0x1E 0 *
```

cnfln

Configure Line—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

Configures a line on the current service module. Use **cnfln** after you have activated the line using **upln**.

Note You cannot configure a line that currently has any configured virtual interfaces on it. To configure a line on an SRM, see the **cnfln** description that appears before the current description.

Note The syntax varies according to the line type, so each line type has a description.

Syntax (SONET)

cnfln -sonet <*bay.line*> **-slt** <*LineType*> **-clk** <*clockSource*> **-description** <*circuitIdentifier*>

Syntax Description (SONET)

-sonet	Enter the keyword (**-sonet**) followed by the *bay.line* number. For example: `-sonet 1.2` Ranges: • bay: 1–2 • line: 1–8
-slt	Enter the keyword (**-slt**) followed by the *LineType* identifier. Identifiers: • 1 = SONET • 2 = SDH
-clk	Enter the keyword (**-clk**) followed by the *clockSource* identifier. Identifiers: • 1 = loopTiming • 2 = localTiming
-description	The *circuitIdentifier* is a text string with up to 64 characters that uniquely identifies the line.

Syntax (DS3)

cnfln -ds3 <*bay.line***> -len <***LineLength***> -clk** <*clockSource*> **-id** <*circuitIdentifier*>

Syntax Description (DS3)

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
-len	Enter the keyword (**-len**) followed by the *LineLength* identifier. For example: `-len 2` Range: • 0–64000 meters
-clk	Enter the keyword (**-clk**) followed by the *clocksource* identifier. For example: `-clk 2` Identifiers: • 1 = loopTiming • 2 = localTiming
-id	The *circuitIdentifier* is a text string with up to 64 characters that uniquely identifies the line.

Syntax (DS3)

cnfln -**ds3** <*bay.line*> **-lt** <*LineType*> **-len** <*LineLength*> **-oof** <*OOFCriteria*> **-cb** <*AIScBitsCheck*> **-id** <*circuitIdentifier*> **-rfeac** <*RcvFEACValidation*> **-clk** <*clockSource*>

Syntax Description (DS3)

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
-lt	Enter the keyword (**-lt**) followed by the *LineType* identifier.
-len	Enter the keyword (**-len**) followed by the length of the line in meters, for example, **-len** 2. Range: 0–64000 meters. **Note** On a T3 line, you must set the line length to match the physical length of the cable. Setting this value to a value higher than the actual length of the cable may cause a higher output drive from the card. However, this will not impact the overall power consumption or heat dissipation of the card.
-oof	Enter the keyword (**-oof**) followed by the *OOFCriteria* identifier. For example: **-oof** 1 Identifiers: • 1 = 3 out of 8 • 2 = 3 out of 16
-cb	Enter 1 or 2 for *LineAIScBitsCheck.* The setting determines whether the node checks the C-bit in response to AIS. The significance is as follows: • 1 = check the C-bit • 2 = ignore the C-bit
-id	The *circuitIdentifier* is a text string with up to 64 characters that uniquely identifies the line.

-**rfeac**	Value to set FEAC (far-end alarm and control) code validation criteria. The value for *LineRcvFEACValidation* can be 1 or 2 and has the following significance: • 1 = 4 out of 5*: a valid FEAC code is declared if 4 of 5 codes match.* • 2 = 8 out of 10: a *valid FEAC code is declared when 8 of 10 codes match.*
-**clk**	Enter 1 or 2 for *clockSource.* The significance is as follows: • 1 = loop timing: receive clock is re-directed to become the transmit clock. • 2 = local timing: (default) transmit clock comes from the backplane.

Syntax (E1)

cnfln -e1 <*bay.line*> **-clk** <*clockSource*>

Syntax Description (E1)

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
-clk	Enter the keyword (**-clk**) followed by the *clocksource* identifier. For example: `-clk 2` Identifiers: • 1 = loopTiming • 2 = localTiming

Syntax (E3)

cnfln -e3 <*bay.line***> -clk <***clockSource***> -txtrace** <*txtrace*> **-id** <*circuitIdentifier*>

Syntax Description (E3)

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
-clk	Enter the keyword (**-clk**) followed by the identifier *clocksource* identifier. For example: `-clk 2` Identifiers: • 1 = loopTiming • 2 = localTiming
-txtrace	Optional keyword that allows you to transmit and display trail trace bytes. You can test the line by transmitting a group of numbers using **cnfln -txtrace** and then displaying the result using the **dspln** command to see if the numbers are the same. See Example below.
-id	The *circuitIdentifier* is a text string with up to 64 characters that uniquely identifies the line.

Related Commands

dsplns, **dspln, dnln**, **upln**, **addlnloop**

Attributes

Log: yes	State: active	Privilege: ANYUSER

Example

Configure a dsx1ESF type line on bay 1, line 16, 12000 meters in length, with a local clock source:

```
MGX8850.2.AXSME.a > cnfln  -ds3 1.16 -lineType 2 -clk 2
```

Configure T3 line 4 on the current card to have B8ZS coding and a length of 10:

```
MGX8850.1.4.AXSM.a > cnfln -ds3 4 2 10
```

Enable frame scrambling for SONET line 1 of the card in bay 1:

```
MGX8850.1.4.AXSM.a > cnfln -sonet 1.1 -sfs 2
```

Transmit and display trail trace bytes on an E3 line:

```
MGX8850.12.AXSME.a > cnfln -e3 1.1 -txtrace 123456789123450
MGX8850.12.AXSME.a > dspln -e3 1.1
  Line Number           : 1.1
  Admin Status          : Up                Alarm Status        :
Critical
  Line Type             : e3g832adm         Number of ports     : 0
  Line Coding           : e3HDB3            Number of partitions: 0
  Line Length(meters)   : 0                 Number of SPVC      : 0
  Loopback              : NoLoop            Number of SPVP      : 0
  Xmt. Clock source     : localTiming       Number of SVC       : 0
  Xmt. Trace            : 123456789123450
```

cnflnalm

Configure Line Alarm—AXSM-XG

Use the **cnflnalm** command to configure statistical line alarms thresholds. You can use this command to make the lines more or less sensitive to alarms.

Syntax (Sonet Section)

cnflnalm -sonetsec <bay.line> **-secsev** <Severity> **-seces15** <ES15min> **-seces24** <ES24Hr> **-secses15** <SES15min> **-secses24** <SES24Hr> **-secsefs15** <SEFS15min> **-secsefs24** <SEFS24Hr> **-seccv15** <UAS15min> **-seccv24** <UAS24Hr>

Syntax Description (Sonet Sections)

-sonetsec <bay.line>	Identifies the line on which you want to configure statistical line alarms thresholds. Enter the keyword (**-sonetsec**) followed by the line number, in the format *bay.line.* For example: **-sonetsec** 1.2 **Note** Use the **dsplns** command to see the line numbers for all lines on the current card.
-secsev <Severity>	Determines the severity of SONET or SDH section statistical alarm counters. When a Statistical Counter exceeds its specified threshold, the system sends an alarm with appropriate severity. Enter a number to indicate the severity for all statistical alarms on the specified line as follows: • 1—minor • 2—major 3—none (no alarm will be raised).
-seces15 <ES15min>	Sets the threshold for errored seconds in the current 15-minute interval.
-seces24 <ES24Hr>	Sets the threshold for errored seconds in the current 24-hour interval.
-secses15 <SES15min>	Sets the threshold for severely errored seconds in the current 15-minute interval.
-secses24 <SES24Hr>	Sets the threshold for severely errored seconds in the current 24-hour interval.
-secsefs15 <SEFS15min>	Sets the threshold for severely errored framing seconds in the current 15-minute interval.
-secsefs24 <SEFS24Hr>	Sets the threshold for severely errored framing seconds in the current 24-hour interval.
-seccv15 <UAS15min	Sets the threshold for code violations in the current 15-minute interval.
-seccv24 <CV24Hr>	Sets the threshold for code violations in the current 24-hour interval.

Syntax (Sonet Lines)

cnflnalm -sonetline <bay.line> **-lnsev** <Severity> **-lnes15** <ES15min> **-lnes24** <ES24Hr> **-lnses15** <SES15min> **-lnses24** <SES24Hr> **-lncv15** <CV15min> **-lncv24** <CV24Hr> **-lnuas15** <UAS15min> **-lnuas24** <UAS24Hr>

Syntax Description (Sonet Lines)

-sonetline <bay.line>	Identifies the line which to you want to configure statistical line alarms thresholds. Enter the keyword (**-sonetline**) followed by the line number, in the format *bay.line*. For example: **-sonetline** 1.2 **Note** Use the **dsplns** command to see the line numbers for all lines on the current card.
-lnsev <Severity>	Determines the severity of SONET or SDH line statistical alarm counters. When a Statistical Counter exceeds its specified threshold, the system sends an alarm with appropriate severity. Enter a number to indicate the severity for all statistical alarms on the specified line as follows: • 1—minor • 2—major • 3—none (no alarm will be raised).
-lnes15 <ES15min>	Sets the threshold for errored seconds in the current 15-minute interval.
-lnes24 <ES24Hr>	Sets the threshold for errored seconds in the current 24-hour interval.
-lnses15 <SES15min>	Sets the threshold for severely errored seconds in the current 15-minute interval.
-lnses24 <SES24Hr>	Sets the threshold for severely errored seconds in the current 24-hour interval.
-lncv15 <CV15min>	Sets the threshold for code violations in the current 15-minute interval.
-lncv24/ <CV24Hr>	Sets the threshold for code violations in the current 24-hour interval.
-lnuas15 <UAS15min>	Sets the threshold for unavailable seconds in the current 24-hour interval.
-lnuas24 <UAS15min>	Sets the threshold for unavailable seconds in the current 24-hour interval.

Related Commands

clradjlnalmcnt, **dspadjlnalm**, **dspadjlnalmcnt**, **dsplnalm**, **dsplnalmcnf**, **dsplnalmcnt**, **dsplnalms**

Attributes

Log: yes	State: active, standby, init	Privilege: ANYUSER

Example

In the following example, the SONET line 1.1 to show minor alarms when any of the statistical counters exceed their threshold. The user also sets the threshold for errored seconds in the current 24-hour and 15-minute intervals to 500.

```
M8950_DC.16.AXSMXG.a > cnflnalm -sonetline 1.1 -lnsev 1 -lnes15 500 -lnes24 500

M8950_DC.16.AXSMXG.a >
```

cnfpart

Configure Resource Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Modifies a resource partition. A resource partition on the AXSM consists of minimum and maximum percentages of bandwidth, a VPI/VCI range, and a minimum and maximum number of connections available to a network control application. The current network controller is PNNI. Refer to the description of **addpart** for information on resource partitions.

You must bring the port down using **dnport** before you can configure a partition using **cnfpart**.

Note The **cnfpart** and **cnfrscprtn** commands are identical. The name "cnfrscprtn" is consistent with the corresponding command in a Cisco MGX 8850 PXM1-based switch. You can use either command.

Note On the AXSM-E and AXSM-XG, the VPI/VCI range can not be modified.

Important VPI/VCI Range Issues

When configuring a partition, be sure to configure the VPI/VCI ranges to meet your actual usage requirements. It is important that you do not configure the entire VPI/VCI range for a single partition. The ability to seamlessly add new partitions in the future depends on configuring only the necessary ranges for each partition.

The Cisco recommended ranges for a single partition are as follows:

- For a VPI on a UNI port where the available range is 0–255, the recommended configured range is 0–140.
- For a VPI on a PNNI port where the range is 0–4096, the recommended configured range is 0–2500 or about 60%.

Caution When adding or configuring a PNNI partition, do not configure the entire VPI/VCI range for one partition. In the future, if you migrate from a PNNI only service to a PNNI/MPLS service with multiple partitions, you will need the additional VPI/VCI ranges to be able to add a new partition. If you configure all of the available ranges for the PNNI partition, you will not be able to add a new MPLS partition without bringing down the port using the **dnport** command to change the PNNI VPI/VCI ranges. Bringing down a port on a live network is usually not an option.

Syntax

cnfpart -if <*if*> **-id** <*partionID*> **-emin** <*egrMinBw*> **-emax** <*egrMaxBw*> **-imin** <*ingMinBw*> **-imax** <*ingMaxBw*> **-vpmin** <*minVpi*> **-vpmax** <*maxVpi*> **-vcmin** <*minVci*> **-vcmax** <*maxVci*> **-mincon** <*min connections*> **-maxcon** <*max connections*>

Note The maximum number of connections must be greater than 10.

Syntax Description

Note On a virtual trunk, the *min_vpi* and *max_vpi* must be the same.

-if	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-id	The partition ID number. The ranges are as follows: • AXSM: 1–5 • AXSM-E: 1–20 • AXSM-XG: 1–20
-emin	Specifies the guaranteed percentage of egress bandwidth. Each unit of *egrMinBw* is 0.00001 of the total bandwidth on the port. (An *egrMinBw* of 1000000 = 100%.) This approach provides a high level of granularity.
-emax	Specifies the maximum percentage of the bandwidth. Each unit of *egrMaxBw* is 0.00001 of the total bandwidth available to the port. (An *egrMaxBw* of 1000000 = 100%.) The resulting bandwidth must be at least 50 cps.
-imin	Specifies the guaranteed percentage of the ingress bandwidth. Each unit of *ingMinBw* is 0.00001 of the total bandwidth available to the port. For example, an *ingMinBw* of 1000000 = 100%.
-imax	Specifies the maximum percentage of the ingress bandwidth. Each increment of *ingMaxBw* is 0.00001 of the total bandwidth on the port. For example, an *ingMaxBw* of 1000000 = 100%. Note that the maximum ingress bandwidth must be at least 50 cps.
-vpmin	Specifies the minimum VPI. For NNI, the range is 0–4095. For UNI, the range is 0–255.
-vpmax	Specifies the maximum VPI in the range 0–4095 for an NNI. For a UNI, the range is 0–255. The *maxvpi* cannot be less than the *minvpi.*
-vcmin	Minimum VCI range: 0–2000 (OC-48 only) or 1–65535
-vcmax	Maximum VCI: range: 0–2000 (OC-48 only) or 1–65535
-mincon	Specifies the guaranteed number of connections. The range is between 0 and the maximum number of connections in the port group. See **dspcd** for information about port groups. **Note** On UNI ports, 1% of the <*minConns*> value is reserved for signaling.
-maxcon	Specifies the maximum number of connections. The range is between 10 and the maximum number of connections in the port group. See **dspcd** port group information. *maxConns* cannot be less than *minConns*.

Related Commands

addpart, **delpart**, **dsppart**, **dsppart**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.AXSM.a > cnfpart -if 1 -id 1 -vpmin 11
```

cnfpath

Configure Path—AXSM-XG

Configures the attributes of the specified STS or DS3 path (*path_num*).

For an STS path, a service is provisioned by configuring the payload (**-payload**).

The path width (**-width**) may only be configured when the path is down.

Syntax

For STS:

cnfPath [*pathType*] <*path_num*> **-width** <*width_spec*> (path in down state only)

cnfPath [*pathType*] <*path_num*> [**-payload** <*sts_au_payload_type*>] [**-txtrace** <*trace-string*>]

Note -payload and -width options are applicable to channelized card only.

For DS3:

cnfpath [*pathType*] <*path_num*> [**-cb** <*AIScBitsCheck*>] [**-plcp** <*plcp_spec*>]

Syntax Description

path type	Keyword that specifies the type of path you are configuring. Possible path types are: • **-sts**: sts/au path • **-ds3**: ds3 path
path_num	Identifies the path you want to configure. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.
width_spec	Specifies the width of the path. • 1 = sts1_stm0 • 3 = sts3c_stm1 • 12 = sts12c_stm4 • 48 = sts48c_stm16 • 192 = sts192c_stm64
sts_au_payload_type	Specifies the payload type. Possible values are: • atm • ds3 (sts1_stm0 only) **Note** If you select ds3, you must set the width to sts1_stm0. DS3 automatically carries ATM.

trace-string	For STS paths, this option allows you to transmit and display trail trace bytes. You can test the line by transmitting a group of numbers using **cnfln -txtrace** and then displaying the result using the **dshpln** command to see if the numbers are the same. Enter the keyword (**-txtrace**) followed by the *TraceString*. Possible values are: • On SDH, the *trace-string* is 15 bytes maximum. • ON SONET lines, the *trace-string* is 62 bytes maximum.
AIScBitsCheck	For DS3 paths, this option specifies whether to ignore or check the AIS C-bit. • 1–Chk C-bit • 2–Ignore C-bit
plcp_spec	For DS3 paths, enables or disable PLCP. • 1–enable • 2–disable

Related Commands

dsppath, dsppaths, uppath, dnpath

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Configure a ds3 path for ATM with a width of 1.

```
MGX8950.3.AXSMXG.a > cnfpath 1.1.1 -payload ds3 -width 1
```

Changing the path width.

```
MGX8950.1.AXSMXG.a > cnfpath 1.1.1 -width 12
Change in path width may be traffic affecting.
Do you want to proceed (Yes/No) ? y

MGX8950.1.AXSMXG.a >

MGX8950.1.AXSMXG.a > cnfpath 1.1.2 -width 1
Change in path width may be traffic affecting.
Do you want to proceed (Yes/No) ? n
command not executed

MGX8950.1.AXSMXG.a >
```

cnfpathalm

Configure Path Alarm—AXSM-XG

Configures a specified statistical alarm threshold for a specified path (*path_num*). It also configures the *Severity* of the alarm.

Syntax

cnfpathalm [pathType] <*path_num*> [**-sev** <*Severity*>] [**-es15** <*ES15min*>] [**-es24** <*ES24Hr*>] [**-ses15** <*SES15min*>] [**-ses24** <*SES24Hr*>] [**-cv15** <*CV15min*>] [**-cv24** <*CV24Hr*>] [**-uas15** <*UAS15min*>] [**-uas24** <*UAS24Hr*>] [**-sefs15** <*SEFS15min*>] [**-sefs24** <*SEFS24*>] **[-psev** <*Severity*>] [**-pbcv15** <*CV15min*>] [**-pbcv24** <*CV24Hr*>] [**-pbes15** <*ES15min*>] [**-pbes24** <*ES24Hr*>] [**-pbses15** <*SES15min*>[[**-pbses24** <*SES24Hr*>] [**-psefs15** <*SEFS15min*>] **[-psefs24** <*SEFS24Hr*>] **[-puas15** <*UAS15min*>] **[-puas24** <*UAS24Hr*>]

Syntax Description

path_num	Identifies the path whose statistical alarm threshold(s)/severity you want to configure. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.
-sev	The severity level of the alarm to be raised when the specified statistical threshold is exceeded. • 1–minor • 2–major • 3–none
-es15	ES threshold value for a 15 minute window.
-es24	ES threshold value for a 24 hour window.
-ses15	SES threshold value for a 15 minute window.
-ses24	SES threshold value for a 24 hour window.
-cv15	CV threshold value for a 15 minute window.
-cv24	CV threshold value for a 24 hour window.
-uas15	UAS threshold value for a 15 minute window.
-uas24	UAS threshold value for a 24 hour window.
-sefs15	SEFS threshold value for a 15 minute widow. DS3 conguration only.
-sefs24	SEFS threshold value for a 24 hour window. DS3 conguration only.
-psev	The path severity level of the alarm to be raised when the specified statistical threshold is exceeded. DS3 conguration only. • 1–minor • 2–major • 3–none
-pbcv15	Path BCV threshold value for a 15 minute window. DS3 conguration only.
-pbcv24	Path BCV threshold value for a 24 hour window. DS3 conguration only.
-pbes15	Path BES threshold value for a 15 minute window. DS3 conguration only.

-pbes24	Path BES threshold value for a 24 hour window. DS3 conguration only.
-pbses15	Path BSES threshold value for a 15 minute window. DS3 conguration only.
-pbses24	Path BSES threshold value for a 24 hour window. DS3 conguration only.
-psefs15	Path SEFS threshold value for a 15 minute window. DS3 conguration only.
-psefs24	Path SEFS threshold value for a 24 hour window. DS3 conguration only.
-puas15	Path UAS threshold value for a 15 minute window. DS3 conguration only.
-puas24	Path UAS threshold value for a 24 hour window. DS3 conguration only.

Related Commands

dsppathalmcnf

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

```
MGX8950.3.AXSMXG.a > dsppathalmcnf 1.1.1
PathNum: 1.1.1
PathType : sts
  Path Stat Alarm Severity: None
              15min Threshold    24hr Threshold
  Path ESs :    20                 200
  Path SESs:    3                  7
  Path CVs :    25                 250
  Path UASs:    10                 10

MGX8950.3.AXSMXG.a > dsppathalmcnf 1.4.1.1
PathNum: 1.4.1.1
PathType : ds3
  Path Stat Alarm Severity: None
              15min Threshold    24hr Threshold
  Path ESs :    20                 200
  Path SESs:    3                  7
  Path CVs :    25                 250
  Path UASs:    10                 10
```

cnfport

Configure Port—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Configures or changes the parameters of a logical port. You can use **dspport** to verify the changes.

If a resource partition is configured on the port, you must first down the port using **dnport** to change the guaranteed rate (*guaranteedRate*), the maximum rate (*maxrate*), or the SCT ID (*sctID*) parameters using the **cnfport** command. However, the guaranteed rate (*guaranteedRate*) and the maximum rate (*maxrate*) must be set to the same value. After you change parameters, use the **upport** command to return the port to operation.

Syntax

cnfport -if <*ifNum*> [**-min** <*guaranteedRate*>] [**-max** <*maxrate*>] [**-sct** <*sctID*>] [**-minvpi** <*minVpi*>] [**-maxvpi** <*maxvpi*>]

Syntax Description

-if	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-min	Specifies the guaranteed rate on a logical port in cells per second (cps). The cumulative guaranteed rate cannot exceed the highest value in the following ranges: OC3: 50–353207 cps T3: 50–96000 (PLCP) or 104268 (ADM) cps E3: 50–80000 cps T1: 50–3622 cps E1: 50–4528 cps
-minvpi	Specifies the minimum VPI. NNI range: 0 and 4095 UNI range: 0 and 255 EVNNI range: 0 and 4095 EVUNI range: 0 and 255
-maxvpi	Specifies the maximum VPI. NNI range: 0 and 4095 UNI range: 0 and 255 EVNNI range: 0 and 4095 EVUNI range: 0 and 255

-max	Specifies the maximum rate on a logical port in cells per second (cps). • OC3: 50–353207 cps • T3: 50–96000 (PLCP) or 104268 (ADM) cps • E3: 50–80000 cps • T1: 50–3622 cps • E1: 50–4528 cps
-sct	Specifies the number of a service class template (SCT) for the port. The range is 0–255. Cisco provides SCT numbers 2, 3, 4, and 5. You can modify one of these SCTs through the Cisco WAN Manager application and assign a number in the range 6–255 to the new SCT. Subsequently, you can assign the new SCT to the port with the *sctID* parameter in **cnfport**. To see the ID of the current SCT for this port, use **dspport**. To see the parameters within the current SCT, use the **dspportsct** command.

Related Commands

addport, **delport**, **dspport**, **dspports**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

For logical port 1, configure a guaranteed minimum of 10000 cps and a maximum rate of 20000 cps.

```
MGX8850.7.AXSME.a > cnfport -if 1 -min 10000 max 20000
```

cnfportdbg

Configure Port Debugging—AXSM

Use the **cnfportdbg** command to enable or disable the debugging feature on the specified port.

Syntax

cnfportdbg <*portNum*> <*configFlag*>

Syntax Description

portNum	Port number, in the range from 1 through 60.
configFlag	Enables or disables the port debugging feature. Enter **1** to enable port debugging, or enter **2** to disable port debugging.

Related Commands

clrportdbgcnt, **dspportdbgcnf**,**dspportdbgcnt**

Attributes

Log: yes	State: active, standby	Privilege: SERVICE_GP

Example

Enable the debugging feature on port 11.

```
M8850_LA.1.AXSM.a > cnfportdbg 11 1

M8850_LA.1.AXSM.a >
```

cnfportdbgcnt

Configure Port Debug Counters—AXSM

Configure port debugging counters on the current AXSM.

Syntax

cnfportdbg <*ifNum*> <*configFlag*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 60.
configFlag	Enables/disables port debugging on the specified port. Enter **1** to enable port debugging, or **0** to disable port debugging.

Related Commands

clrportdbg, **dspportdbgcnt**

Attributes

Log: yes	State: active, standby	Privilege: SERVICE_GP

Example

Enable port debugging on logical interface (or port) 11, and then enter the **dspportdbgcnt** command to display the port debugging counters for logical interface 11.

```
M8850_NY.1.AXSM.a > cnfportdbg 11 1
M8850_NY.1.AXSM.a > dspportdbgcnt 11
                             Ingress         Egress
Arrival cells     cnt[1]:          0          27187
Threshold dscd    cnt[1]:          0              0
Programmed dscd   cnt[1]:          0              0
Departure cells   cnt[1]:          0          27350

Arrival cells     cnt[2]:          0              0
Threshold dscd    cnt[2]:          0              0
Programmed dscd   cnt[2]:          0              0
Departure cells   cnt[2]:          0              0

Arrival cells     cnt[3]:          0              0
Threshold dscd    cnt[3]:          0              0
Programmed dscd   cnt[3]:          0              0
Departure cells   cnt[3]:          0              0

Arrival cells     cnt[4]:          0              0
Threshold dscd    cnt[4]:          0              0
Programmed dscd   cnt[4]:          0              0
Departure cells   cnt[4]:          0              0

Arrival cells     cnt[5]:          0              0

Type <CR> to continue, Q<CR> to stop:
```

```
Threshold dscd    cnt[5]:          0              0
Programmed dscd   cnt[5]:          0              0
Departure cells   cnt[5]:          0              0

Arrival cells     cnt[6]:          0              0
Threshold dscd    cnt[6]:          0              0
Programmed dscd   cnt[6]:          0              0
Departure cells   cnt[6]:          0              0

Arrival cells     cnt[7]:          0              0
Threshold dscd    cnt[7]:          0              0
Programmed dscd   cnt[7]:          0              0
Departure cells   cnt[7]:          0              0

Arrival cells     cnt[8]:          0              0
Threshold dscd    cnt[8]:          0              0
Programmed dscd   cnt[8]:          0              0
Departure cells   cnt[8]:          0              0

Board memory full dscd:            0              0
Port  memory full dscd:            0              0
CoS thresholds dscd:               0              0

Type <CR> to continue, Q<CR> to stop:
VC  thresholds dscd:               0              0
```

cnfprfparam

Configure Profiler Parameters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **cnfprfparam** to configure the interval at which the profiler facility is monitored. At the end of the specified interval, a file containing profiler statistics is generated and transferred to the Cisco WAN Manager (CWM) via FTP.

The profiler facility collects and displays statistics from resource usage. The resources include:

- Message queue
- Memory usage
- Memory chunks

Caution The profiler is a facility intended for developers at Cisco Systems. Because of the possibly large CPU overhead involved with the profiler, using **dspprf** on an overloaded switch can have unpredictable and unacceptable consequences. For example, it could overwhelm a marginally functioning switch. For this reason, you should contact the TAC before using dspprf and never run it for exploratory or experimental reasons. For a safer look at system resources, use the Resource Monitoring commands (**cnfrmrsrc**, **dsprmalms**, **dsprmrsrc**, **dsprmrsrcs**, and **dsprminfo**) or the **dspprfhist** command.

Syntax

cnfprfparam <*bucket interval:1-600 seconds*>

Syntax Description

bucket interval:1-600 seconds	Specifies the number of seconds to wait before starting the next bucket of profiler statistics. Enter a number in the range from 1 through 600 seconds.

Related Commands

dspprf, **dspprfhist**

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Configure the profiler statistics collection bucket interval to be 300 seconds.

```
M8850_LA.1.AXSM.a > cnfprfparam 300
The bucket interval will be effective after the current bucket interval is over.

M8850_LA.1.AXSM.a >
```

cnfrmrsrc

Configure Resource Monitor Resource—AXSM, AXSM-E, AXSM-XG

Configures the resource monitor polling interval and thresholds for a specific resource (*rsrcId*).

Syntax

cnfrmrsrc <*rsrcId*> [**-poll**] [**-loth**] [**-medth**] [**-hith**]

Syntax Description

rsrcId	The resource ID number that specifies the OS resource to configure. Use the **dsprmrsrcs** command to get resource ID numbers. Range 0–16.
-poll	The polling interval in seconds. Range: 5–86400 seconds (24 hours).
-loth	The low threshold in percentage. Range: zero to any percentage less than the medium threshold.
-medth	The medium threshold in percentage. Range: any percentage greater than the low threshold and less than the high threshold.
-hith	The high threshold in percentage. Range: any percentage greater than the medium threshold and up to 100%.

Related Commands

dsprmrsrcs, dsprmrsrc, dsprmalms

Attributes

Log: no	State: active, standby	Privilege: CISCO_GP

Example

```
cnfrmrsrc 3 -poll 30 -loth 1800 -medth 1950 -hith 2100
```

cnfrscprtn

Configure Resource Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **cnfrscprtn** command lets you modify a resource partition. A resource partition on a UNI/NNI back card consists of minimum and maximum percentages of bandwidth, a VPI/VCI range, and a minimum and maximum number of connections available to a network control application.

The current network controller is PNNI. Refer to the description of **addrscprtn** for information on resource partitions.

For many partition parameters, you can dynamically modify a partition—without administratively downing the port—by using the **cnfpart** or **cnfrscprtn** command. However, before you can modify the minimum or maximum VPI or VCI, the port must be down.

Syntax

cnfrscprtn -if <*if*> **-id** <*egrMinBw*> **-emin** <*egrMinBw*> **-emax** <*egrMaxBw*> **-imin** <*ingMinBw*> **-imax** <*ingMaxBw*> **-vpmin** <*minVpi*> **-vpmax** <*maxVpi*> **-vcmin** <*minVci*> **-vcmax** <*maxVci*> **-mincon** <*min connections*> **-maxcon** <*max connections*>

Note The maximum number of connections must be greater than 10.

Syntax Description

Note On a virtual trunk, the *min_vpi* and *max_vpi* must be the same.

-if	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-id	Partition identifier, in the range from 1 through 5.
-emin	Specifies the guaranteed percentage of egress bandwidth. Each unit of *egrMinBw* is 0.00001 of the total bandwidth on the port. (An *egrMinBw* of 1000000 = 100%.) This approach provides a high level of granularity.
-emax	Specifies the maximum percentage of the bandwidth. Each unit of *egrMaxBw* is 0.00001 of the total bandwidth available to the port. (An *egrMaxBw* of 1000000 = 100%.) The resulting bandwidth must be at least 50 cps.
-imin	Specifies the guaranteed percentage of the ingress bandwidth. Each unit of *ingMinBw* is 0.00001 of the total bandwidth available to the port. For example, an *ingMinBw* of 1000000 = 100%.
-imax	Specifies the maximum percentage of the ingress bandwidth. Each increment of *ingMaxBw* is 0.00001 of the total bandwidth on the port. For example, an *ingMaxBw* of 1000000 = 100%. Note that the maximum ingress bandwidth must be at least 50 cps.

-vpmin	Specifies the minimum VPI. For NNI, the range is 0–4095. For UNI, the range is 0–255. **Note** The -vpmin can only be modified when the port is in the 'Down' state.
-vpmax	Specifies the maximum VPI in the range 0–4095 for an NNI. For a UNI, the range is 0–255. The *maxvpi* cannot be less than the *minvpi.* **Note** The -vpmax can only be modified when the port is in the 'Down' state.
-vcmin	Minimum VCI range: 0–2000 (OC-48 only) or 1–65535 **Note** The -vcmin can only be modified when the port is in the 'Down' state.
-vcmax	Maximum VCI: range: 0–2000 (OC-48 only) or 1–65535 **Note** The -vcmax can only be modified when the port is in the 'Down' state.
-mincon	Specifies the guaranteed number of connections. The range is between 0 and the maximum number of connections in the port group. See **dspcd** for information about port groups. **Note** On UNI ports, 1% of the <*minConns*> value is reserved for signaling.
-maxcon	Specifies the maximum number of connections. The range is between 10 and the maximum number of connections in the port group. See **dspcd** port group information. *maxConns* cannot be less than *minConns*.

Related Commands

addrscprtn, delrscprtn, dsprscprtns, dsprscprtn

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Configure the following:

- The logical port (ifNum) is 11.
- The partition number is 1.
- The ingress and egress each have a minimum of 1000 and a maximum of 10000.
- VPI range is 100-200.
- VCI range is 35-65535.
- Minimum guaranteed number of connections is 1.
- Maximum number of connections is 10.

```
M8850_LA.1.AXSM.a > cnfrscprtn -if 11 -id 1 -emin 1000 -emax 10000 -imin 1000 -imax 10000
-vpmin 100 -vpmax 200 -mincon 1 -maxcon 10
```

copychans

Copy Channels—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **copychans** command lets you copy one or more channels from a single connection.

Note The purpose of this command is to facilitate debugging and is not intended to be an easy way to add significant numbers of user connection.
Improper use of this command can result in dangling (unpaired) endpoints in the network.

The following steps are recommended when using this command:

Step 1 Add channels on a single connection.

Step 2 Copy the channels by using the **copychans** command.

Syntax

copychans <*source*> <*destn*> [**-rem** <*remote Conn Id*>] [**-num** <*num. conns to add*>] [**-verbose** <1 | 0>]

Syntax Description

source	source ID: The endpoint that serves as a template for copying. The format of this value is: ifNum.vpi.vci. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
destn	Destination ID: The endpoint into which the controller pastes the copied connection template. The format of this value is: ifNum.vpi.vci.The range for ifNum is 1-31. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-rem	The remote connection ID specified in the format: ifNum.vpi.vci
-num	The number of consecutive endpoints to be added, starting from destn endpoint. Default: 1
-verbose	Prints the status of cloning process if enabled. • 1 = enable verbose • 0 = disable verbose Default: disabled

Related Commands

addcon, delcon, dspcons

Attributes

Log: yes	State: active	Privilege: CISCO_GP

copycons

Copy Connections—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **copycons** command lets you copy one or more endpoints from a single endpoint. This command works by incrementing the VCI for a VCC endpoint and the VPI for a VPC endpoint.

Note The purpose of this command is to facilitate debugging and is not intended to be an easy way to add significant numbers of user connection.
Improper use of this command can result in dangling (unpaired) endpoints in the network.

The following steps are recommended when using this command:

Step 1 Add a slave endpoint then a master endpoint

Step 2 Copy the slave endpoints by using the **copycons** command.

Step 3 Copy the master endpoints by using the **copycons** command.

Syntax

copycons <*source*> <*destn*> [**-rem** <*remote Conn Id*>] [**-num** <*num. conns to add*>]
[**-verbose** <1 | 0>]

Syntax Description

source	source ID: The endpoint that serves as a template for copying. The format of this value is: ifNum.vpi.vci. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
destn	Destination ID: The endpoint into which the controller pastes the copied connection template. The format of this value is: ifNum.vpi.vci.The range for ifNum is 1-31. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-rem	The remote connection ID specified in the format: ifNum.vpi.vci
-num	The number of consecutive endpoints to be added, starting from destn endpoint. Default: 1
-verbose	Prints the status of cloning process if enabled. • 1 = enable verbose • 0 = disable verbose Default: disabled

Related Commands

addcon, delcon, dspcons

Attributes

Log: yes	State: active	Privilege: CISCO_GP

core

Core Memory Dump—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The core command applies to core memory dumps that can occur when a card is reset. (Whether a specific reset type leads to a core dump is configurable.) You can copy zipped files to a workstation.

The core task has the following functional areas (further described in the Syntax Description sections):

- It displays:
  - Whether core files from the processor card exist, the reset reason that triggered the core dump as well as a list of all possible reset reasons, a time stamp, and so on
  - Status of core dumps in progress
  - The current configuration of various parameters
  - A subset of core-related information on the CLI of a service module
- It lets you configure a wide variety of applicable functions.
- It can take an immediate action, such as aborting an active core dump or acquiring a snapshot of a card's core memory.

Certain functions are complex enough to warrant a detailed description. These functions are noted in the Syntax Description tables and have details in the Usage Guidelines section.

For any AXSM model, a core dump can occur during card boot-up after a reset. The processor compares the reset reason to the core mask for that slot. For any match, core memory is written to a file in the root directory of the C drive. The zipped file has the following format:

core_slot*slot_num*.zip, where *slot_num* is the number of the slot where the AXSM resides

The node logs messages for a service module core dump. The log shows when the core dump started, finished, and aborted as well as any exceptions. To see these logs, use **dsplog -mod CRDMP**.

FTP files to a work station. You can send files to the Cisco TAC to be unzipped and debugged.

Note For a service module core hot-dump, run the command for only one slot at a time, otherwise it fails.

Syntax

core [*?* | mask | mask default | mask <*hex-mask*> | enable | disable]

Syntax Description

core	The **core** command without parameters indicates whether core dumps are enabled for the current slot and that files reside on the C drive
?	The **core** command with a question mark lists the optional parameters.
mask	Enter **core mask** to display the following: • A list of all possible reset reasons • Whether the reset is enabled to trigger a core dump • The associated hexadecimal value of each reason The default mask is 0x262ee. To modify the mask, use mask hex-mask. See also the section, "Usage Guidelines," for the core mask details.

mask default	Enter **core mask default** to return the mask to the default value (0x262ee).
mask <*hex-mask*>	Type **core mask** followed by a hexadecimal value to modify the mask. You can specify a mask regardless of whether core dumping is enabled for the card. See the section, "Usage Guidelines," for the core mask details. See also Examples.
enable	Enter **core enable** to enable automatic core dumping for the current slot.
disable	Enter **core disable** to disable automatic core dumping for the current slot.

Usage Guidelines

A description of usage considerations for the more complex parameters follows.

Disabling Core Dumps, Timeout, and Priority

You may want to disable core dumps for a slot due to the time to write core memory to disk. For example:

- You may have isolated a problem and want to save the time required to write RAM contents to disk.
- The traffic on a card may be of such high priority that you do not want to dump core memory to disk.

As the processor gets busier, core dumps require more time. In addition to disabling core dumps for a slot, you can set the priority of core dumps to low at the switch level or specify a timeout period for core dumps.

Specifying the Core Mask

The core mask is the sum of the hexadecimal numbers associated with reset reasons that are enabled to trigger a core dump. Most reasons for a card reset can be enabled to trigger a core dump. (The reasons that cannot trigger a core dump are indicated as such.) Each reset reason has an associated hexadecimal number—regardless of whether it can trigger a core dump. If the reset reason is ON, the associated hex number is an element of the mask.

To create a core mask, add the hexadecimal values for the reset reasons that you want to be in the mask. The list that follows shows the reset reasons and the default enables. For a simplified example, enter core mask c to specify that only a resource overflow or watchdog timeout can cause a core dump for the slot where you enter this command. The default mask as displayed by core mask follows:

- OFF 00001 not used (cannot be turned ON)
- ON 00002 DRAM Parity Error
- ON 00004 WatchDog Timeout Reset
- ON 00008 Resource Overflow
- OFF 00010 Clear All Configuration (cannot be turned ON)
- ON 00020 Missing Task
- ON 00040 Reset because of PXM Low Voltage
- ON 00080 Reset By Event Log Task
- OFF 00100 Reset from Shell—a reset issued from a low-level debugging shell used by Cisco engineers
- ON 00200 Unknown
- OFF 00400 Reset from PXM—of the reasons PXM causes reset, some (e.g., **resetcd**) can cause a dump

- OFF 00800 Reset System (cannot be turned ON)—the system reset triggered by the **resetsys** command
- OFF 01000 Switch Core Card—the reset caused by the **switchcc** command (core card switch-over)
- ON 02000 Secondary Cache Error
- ON 04000 Software Error Reset
- OFF 08000 S/W reset due to upgrade (cannot be turned ON)
- OFF 10000 Restore All Configuration (cannot be turned ON)
- ON 20000 Device Driver Error

If you add all the reset reasons that are ON in the default mask, the sum is the hexadecimal number 262ee. A reason that cannot trigger a core dump is indicated in the preceding list with “can't be turned ON.” A reset reason that cannot trigger a core dump removes pertinent information from memory.

Redundancy Policy

After a redundant pair of service modules switches over, the former active card is rebooting, so a core dump is possible. Because the activated card is carrying the traffic, the time to write RAM contents from the reset card to disk normally is not an issue. For non-redundant service modules, however, the dump time may be a concern. The parameters for redundancy policy let you determine whether core dumps can occur in non-redundant service modules.

The redundancy policy is a node-level configuration. You can override the configuration on a per slot basis by enabling or disabling core dumps at the CLI of the individual card.

Aborting a Core Dump

In some circumstances, you would want to abort a service module core dump. Example situations follow:

- Two or three core dumps begin, but you do not want the switch to take the time or resources to complete these processes. Additionally, one core dump may be crucial, so to ensure that it does not time out, you could abort one or two of the other core dumps.
- You could have removed redundancy from a pair of card slots but did not disable core dumps on a card where you do not want core dumps. If a core dump begins at such a slot, you can abort the core dump from the PXM then change the configuration on the service module after it comes up.

Related Commands

The following PXM commands are related to the **core** command:

ftp, ll, cd, dsplog (use the **dsplog** command with the following parameter: **-mod CRDMP**)

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Check the core mask on the current AXSM.

```
M8850_LA.1.AXSM.s > core mask
Automatic core dumping is enabled for this slot.
The current core mask is 0x262ee.
```

```
OFF 00001 not used (can't be turned ON)
ON  00002 DRAM Parity Error
ON  00004 WatchDog Timeout Reset
ON  00008 Resource Overflow
OFF 00010 Clear All Configuration (can't be turned ON)
ON  00020 Missing Task
ON  00040 Reset because of PXM Low Voltage
ON  00080 Reset By Event Log Task
OFF 00100 Reset from Shell
ON  00200 Unknown
OFF 00400 Reset from PXM
OFF 00800 Reset System (can't be turned ON)
OFF 01000 Switch Core Card
ON  02000 Secondary Cache Error
ON  04000 Software Error Reset
OFF 08000 S/W reset due to upgrade (can't be turned ON)
OFF 10000 Restore All Configuration (can't be turned ON)
ON  20000 Device Driver Error
```

Set the core mask to 0xc and note the result in the display.

```
M8850_LA.1.AXSM.s > core mask c
Automatic core dumping is enabled for this slot.
The current core mask is 0xc.

OFF 00001 not used (can't be turned ON)
OFF 00002 DRAM Parity Error
ON  00004 WatchDog Timeout Reset
ON  00008 Resource Overflow
OFF 00010 Clear All Configuration (can't be turned ON)
OFF 00020 Missing Task
OFF 00040 Reset because of PXM Low Voltage
OFF 00080 Reset By Event Log Task
OFF 00100 Reset from Shell
OFF 00200 Unknown
OFF 00400 Reset from PXM
OFF 00800 Reset System (can't be turned ON)
OFF 01000 Switch Core Card
OFF 02000 Secondary Cache Error
OFF 04000 Software Error Reset
OFF 08000 S/W reset due to upgrade (can't be turned ON)
OFF 10000 Restore All Configuration (can't be turned ON)
OFF 20000 Device Driver Error
```

Determine if core dump is enabled for the current slot.

```
M8850_NY.1.AXSM.s > core
Automatic core dumping is enabled for this slot.

Saved core images are on PXM's hard disk (C:/).


M8850_NY.1.AXSM.s >
```

delallcon

Delete All Connections—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **delallcon** command to delete multiple connections from a logical interface (ifNum).

Syntax

delallcon <*ifNum*> [**-vpi** <*vpi*>] [**-verbose** <*1/0*>]

Syntax Description

ifNum	The logical interface (port) number, in the range from 1 through 60.
-vpi	(Optional). This keyword specifies the VPI on which you want to delete connections. The VPI has the range 0–255 for a UNI, or 0–4095 for a UNI or VNNI.
-verbose	(Optional). This keyword enables (**1**) or disables (**0**) verbose mode. In verbose mode, the system immediately displays the connection identifier of each connection after the connection is deleted.

Related Commands

delcon

Attributes

Log: yes	State: active	Privilege: CISCO_GP

Example

Delete all connections on port 11, using verbose mode so that you can see the connection identifier of each connection as it is deleted.

```
MGX8850.11.AXSM.a > delallcon 11 -verbose 1

Conn. 10.1000 deleted successfully
Conn. 10.1001 deleted successfully
Conn. 10.1005 deleted successfully

MGX8850.11.AXSM.a >
```

delapsln

Delete APS Line—AXSM, AXSM-E, AXSM-XG

Removes the specified APS line from the switch.

See the description for the **addapsln** command for a detailed explanation of Automatic Protection Switching (APS).

Syntax

delapsln <*workingline*>

Syntax Description

workingline	Slot number, bay number, and line number of the active line to delete, in the format: *slot.bay.line.* `Example: 1.1.1`

Related Commands

addapsln, cnfapsln, dspapsln, switchapsln, dspapsbkplane, clrbecnt, dspbecnt

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.12.AXSME.a > delapsln 1.1.1
```

delchanloop

Delete Channel Loopback—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Delete a loopback from a connection (channel). For an understanding of the purpose of channel loopbacks, see the description of **addchanloop**.

Syntax

delchanloop <*ifNumber*> <*vpi*> <*vci*>

Syntax Description

ifNumber	The logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI of the connection. The range is 0–4095.
vci	The VCI of the connection. The range is 1–65535.

Related Commands

addchanloop, **dspchanloop**

Attributes

Log: yes	State: active, standby	Privilege: SERVICE_GP

Example

Remove the loopback from VPI/VCI 1 50 on logical port 4.

```
MGX8850.1.AXSM.a > delchanloop 4 1 50
```

delcon

Delete Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Deletes an SPVC or SPVP:

- For dual-ended connections, delete the connection at both ends—at the master end first.
- To delete a single-ended connection, use this command at the master end only.
- To delete a point-to-multipoint (P2MP) connection, all parties must be deleted from the connection before you can delete the connection (see the **delparty** description). For a P2MP connection, use this command at the master end only

Syntax

delcon <*ifnum*> <*vpi*> <*vci*>

Syntax Description

ifnum	Logical interface (or port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	Virtual path identifier in the range 0–255 (UNI) or 0–4095 (NNI or VNNI).
vci	Virtual connection identifier (VCI): • For a VCC on a UNI, the range is 1–4095. On an NNI or VNNI, the VCI range is 1–65535. For MPLS, the recommended minimum VCI is 35. • For a VPC, the *vci* is 0.

Related Commands

dspcon, **addcon**, **cnfcon**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.1.3.AXSME.a > delcon 1 10 40
Deletion successful
```

delcons

Delete Connections—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **delcons** command deletes an entire range of connections on the specified port (*ifNum*). The privilege level of this command is CISCO_GP. This command is intended for use by Cisco Development Engineers only.

Caution The **delcons** command is for use by Cisco Development Engineers during system software testing. The **delcons** command should not be used on production networks that are carrying live traffic. The **delcons** command may delete more than the anticipated number of connections, and repairing the damage may be very costly.

Syntax

delcons <*ifNum*> <*vpi*> <*vci*> [**-num** <*num. conns to del*>] [**-verbose** < 1 | 0 >]

Syntax Description

ifNum	Logical interface (or port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	For a UNI, the range is 0–255. For an NNI, the range is 0–4095.
vci	For a VCC, the range is 1–65535. For a VPC, the only value is 0.
-num	(Optional) Keyword that specifies the number of connections to delete.
-verbose	(Optional) Keyword that enables (1) or disables (0) verbose mode. In verbose mode, the screen displays the connection identifier of each connection immediately after it is deleted.

Related Commands

None

Attributes

Log: no	State: active	Privilege: CISCO_GP

Example

```
M8950_DC.5.AXSM.a > delcons
ERR: permission denied
Access restricted to engineering user only
```

delfdr

Delete Feeder—AXSM, AXSM-E, AXSM-XG

Deletes a feeder node connection from the specified port (*ifNum*). The interface numbers of active ports are displayed in the **dspports** command report.

Note You cannot delete a port that has feeder node connections on it.

For more detailed information on configuring a feeder, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*

Syntax

delfdr <*ifNum*>

Syntax Description

ifNum	The interface number of the port from which the feeder node connection is deleted. The interface numbers of active ports are displayed in the **dspports** command report.

Related Commands

addfdr, dspfdr, dspfdrs

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.9.AXSM.a > delfdr 8
```

delimagrp

Delete IMA Group—AXSM-32-T1E1-E

This command deletes the specified IMA *group*.

Syntax

delimagrp <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

addimagrp, dspimagrp, dspimagrps, cnfimagrp, rstimagrp

Attributes

Log: yes	State: active	Privilege: ANYUSER

Example

```
MGX8850.2.AXSME.a > delimagrp 1.16
```

delimalnk

Delete IMA Link—AXSM-32-T1E1-E

This command deletes an IMA link from the IMA group.

Syntax

delimalnk <*link*>

Syntax Description

link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16

Related Commands

dspimagrp, cnfimagrp, rstimagrp, dspimalnk, addimalnk

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Delete link at bay 1, ds3 16.

```
MGX8850.2.AXSME.a > delimalnk 1.16
```

dellmi

Delete Local Management Interface—AXSM, AXSM-XG

The **dellmi** command lets you delete LMI from an AXSM logical interface. By doing so, the feeder line or connection to the SES is removed.

Note Remove all connections before you delete LMI on an interface.

Syntax

dellmi <*ifNum*>

Syntax Description

ifNum	The logical interface number has a range of 1–60.

Related Command

addlmi, **uplmi**, **dnlmi**, **uplmi**, **clrlmistat**, **dsplmi**, **dsplmis**, **dsplmistat**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Delete the LMI on port 2, then check to see if any LMIs remain.

```
MGX8850.1.AXSM.a > dellmi 2

MGX8850.1.AXSM.a > dsplmis
 IF     Remote    Remote          Rmt      Rmt      LMI     LMI    LMI
 No.    Name      IP              Slot     Port     Admin   Oper   Alarms
 ---    -------   ------------    -----    -----    -----   ----   ------

MGX8850.1.AXSM.a >
```

dellnloop

Delete Line Loop—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Remove the line loopback state from a line.

Syntax (AXSM)

dellnloop <**-ds3** | **-sonet**> <*bay.line*>

Note For AXSM cards, the keyword **ds3** applies to both T3 and E3 line types.

Syntax Description (AXSM)

-ds3 | **-sonet**	Specifies a SONET line (OC-3c, OC-12c, OC-48c) or a DS3 line (E3 or T3).
bay.line	The bay (1 for upper or 2 for lower), and the line number. The line number ranges from 1 to the highest number line on the back card.

Attributes (AXSM)

Log: yes	State: active	Privilege: GROUP1

Syntax (AXSM-32-T1E1-E)

dellnloop -ds3<bay.line>

Syntax Description (AXSM-32-T1E1-E)

-ds3	The ds3 bay number (1–2) and line number (1–16). For example, for bay 1, line 16, enter **-ds3** 1.16

Attributes (AXSM-32-T1E1-E)

Log: yes	State: active, standby, init	Privilege: GROUP1

Related Commands

addlnloop

Example (AXSM-E)

Delete a DS3 loopback line.

```
MGX8850.1.11.AXSME.a > dellnloop -ds3 1.6
Line loop-back status will be changed.
Do you want to proceed (Yes/No) ?
```

Example (AXSM-32-T1E1-E)

Remove the loopback from bay 1, line 1.

```
MGX8850.2.AXSME.a > dellnloop -ds3 1.16
```

delpart

Delete Resource Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Note The **delpart** and **delrscprtn** commands are identical. The name “delrscprtn” is consistent with the corresponding command in Cisco MGX 8850 PXM1-based switch. You can use either command.

Syntax

delpart <*if_num*> <*part_id*>

Syntax Description

if_num	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
part_id	The partition ID number in the range 1–20. Use **dspparts** (or **dsprscprtns**) to see all resource partitions if necessary.

Related Commands

addpart, **cnfpart**, **dsppart**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.1.9.AXSME.a > delpart 1 1
```

delport

Delete Port—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Remove a logical port from a service module. You must delete all connections and resource partitions on the port before you can delete it.

Syntax

delport <*ifNum*>

Syntax Description

ifNum	A logical port (interface) number. Only one logical port is allowed if the line operates as a UNI or NNI. For the virtual network to network interface (VNNI), multiple ports can exist on a line. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126

Related Commands

addport, **cnfport**, **dspport**, **dspports**

Attributes

Log: yes	State: active	Privilege: GROUP1

delrscprtn

Delete Resource Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Delete a resource partition. Note that you must delete all connections in the resource partition before you delete it. For information on resource partitions, refer to the description of **addrscprtn**.

Note The **delpart** and **delrscprtn** commands are identical. The name "cnfrscprtn" is consistent with the corresponding command in Cisco MGX 8850 PXM1-based switch. You can use either command.

Syntax

delrscprtn <*if_num*> <*part_id*>

Syntax Description

if_num	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
part_id	The partition ID number in the range 1–20. Use **dsprscprtns** to see all resource partitions if necessary.

Related Commands

addrscprtn, **dsprscprtns, delpart, addpart, dsppart**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.1.9.AXSME.a > delrscprtn 1 1
```

dnallports

Down All Ports—de-activates all ports—AXSM

The **dnallports** command primarily applies to a situation where you want to re-configure resource partitions or change the choice of service class template (SCT).

Syntax

dnallports

Syntax Description

N o parameters, but the CLI prompts you to confirm the execution.

Related Commands

upallports

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Check the current state of the logical ports. Down all ports. Up all ports. Re-check the state of the ports.

```
MGX8850.1.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum     Port SCT Id     ifType  VPI
           State State Rate       Rate                                (VNNI only)
----- ---- ----- ----- ---------- --------- ----------------- ------ ----------
    1  2.1    Up    Up    1412830   1412830   5                  NNI    0
    2  1.2    Up    Up    1412830   1412830   2                  UNI    0
    3  1.1    Up    Up    1412830   1412830   5                  NNI    0
    4  2.2    Up    Up      10000     10000   2                  UNI    0

MGX8850.1.AXSM.a > dnallports
dnport/dnallports can disrupt traffic on existing connections.
Use this command only to modify partition parameters or change SCT
Do you want to proceed (Yes/No) ? y
WARNING: port is configured as clock source

MGX8850.1.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum     Port SCT Id     ifType  VPI
           State State Rate       Rate                                (VNNI only)
----- ---- ----- ----- ---------- --------- ----------------- ------ ----------
    1  2.1  Down  Down    1412830   1412830   5                  NNI    0
    2  1.2  Down  Down    1412830   1412830   2                  UNI    0
    3  1.1  Down  Down    1412830   1412830   5                  NNI    0
    4  2.2  Down  Down      10000     10000   2                  UNI    0

MGX8850.1.AXSM.a > upallports
Writing secondary clock, dc=1, line=0
Secondary clock turned on

MGX8850.1.AXSM.a >
```

dncon

Down Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Administratively deactivates (or "downs") a connection so that you can modify or troubleshoot the network. This command applies to SPVCs only.

If a connection is a point-to-multipoint (P2MP) connection, all parties on it are de-routed.

To activate the connection, use the **upcon** command.

Syntax

dncon <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	The logical interface (or port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	Virtual path identifier. On a UNI, the range is 0–255. On an NNI, the range is 0–4095.
vci	For a virtual connection (VCC) on a UNI, the range is 1–4095. On an NNI or VNNI, the VCI range is 1–65535. For MPLS, the recommended minimum VCI is 35. For a virtual path connection (VPC), the VCI is always 0.

Related Commands

upcon

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.2.AXSM.a > dncon 1 4095 65535
```

dncons

Down Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Administratively deactivates (or "downs") a range of connections (*vpi/vci*) so that you can modify or troubleshoot the network. This operation applies to only SPVCs. To reactivate the connections, use **upcon**.

Syntax

dncons <*ifNum*> <*vpi*> <*vci*> [**-num** <*num. conns to del*>] [**-verbose** < 1 | 0 >]

Syntax Description

ifNum	Logical interface (or port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	For a UNI, the range is 0–255. For an NNI, the range is 0–4095.
vci	For a VCC, the range is 1–65535. For a VPC, the only value is 0.
-num	(Optional) Keyword that specifies the number of connections to take down.
-verbose	(Optional) Keyword that enables (1) or disables (0) verbose mode. In verbose mode, the screen displays the connection identifier of each connection immediately after it is deleted.

Related Commands

upcon

Attributes

Log: yes	State: active	Privilege: CISCO_GP

Example

```
MGX8850.2.AXSM.a > dncons 1 4095 65535 -num 2 0
```

dnilmi

Down ILMI—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dnilmi** command lets you de-activate (down) ILMI on a logical port so you can modify a configuration, troubleshoot, or run certain commands that require ILMI to be inoperative.

Syntax

dnilmi <*ifNum*> <*partId*>

Syntax Description

ifNum	The ranges for logical interface (or AXSM port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
partId	The ranges for partition identifier are as follows: • AXSM: 1–5 • AXSM-E, AXSM-XG: 1–20

Related Commands

dspilmi, **dspilmis**, **upilmi**

Attributes

Log: yes	State: active, standby	Privilege: SERVICE_GP

Example

```
U4.13.AXSM.a > dspilmi 11 1
Configuration :
------------- :
Port      :       11      SigVpi : 0
Partition :        1      SigVci : 16

IfIndex   : 17635339      S:Keepalive Intvl :      1
SessionId :        1      T:conPoll Intvl   :      5
Ilmi Trap :   enable      K:conPoll InactvFactor : 4

Agent     :   enable      EnFromCtrlr  :   enable
Poll      :   enable      ModLocalAttr :   enable
AddrReg   :   enable      ServReg      :  disable
AutoCnfg  :   enable
ILMI Protocol :
---------------
State      : Verifying
Last Event : Get Response, Connectivity Verified
IME Type   : network side
IF Type    : Private UNI
```

```
Peer Info :
----------- IfName        : atmVirtual.13.1.1.11
Sys Id        : 0 48 148 9 246 54
If Identifier : 0x10d180b
Sys Up Time   : 0x258
Version       : 3
Addr Admin    : enable

U4.7.PXM.a > cc 13

(session redirected)

U4.13.AXSM.a > dspilmis

    Sig. rsrc  Ilmi  Sig  Sig Ilmi  S:Keepalive T:conPoll K:conPoll
    Port Part State  Vpi  Vci Trap  Interval    Interval  InactiveFactor
    ---- ----  ---- ---- ---- --- ------------  ---------- ----------
   11    1   Off     0    16    On          1          5          4
U4.13.AXSM.a > dspilmi 11 1
Configuration :
------------- :
Port      :       11      SigVpi : 0
Partition :        1      SigVci : 16

IfIndex   : 17635339      S:Keepalive Intvl :      1
SessionId :        1      T:conPoll Intvl   :      5
Ilmi Trap :   enable      K:conPoll InactvFactor : 4

Agent     :  disable      EnFromCtrlr  :  disable
Poll      :   enable      ModLocalAttr :  disable
AddrReg   :  disable      ServReg      :  disable
AutoCnfg  :  disable
ILMI Protocol :
---------------
State      : UNKNOWN
Last Event : UNKNOWN

U4.13.AXSM.a > upilmi 11 1
Warning: connections (if any) on port could get rerouted.
Do you want to proceed (Yes/No) ? y

U4.13.AXSM.a > dspilmi 11 1
Configuration :
------------- :
Port      :       11      SigVpi : 0
Partition :        1      SigVci : 16

IfIndex   : 17635339      S:Keepalive Intvl :      1
SessionId :        1      T:conPoll Intvl   :      5
Ilmi Trap :   enable      K:conPoll InactvFactor : 4

Agent     :   enable      EnFromCtrlr  :  disable
Poll      :   enable      ModLocalAttr :  disable
AddrReg   :  disable      ServReg      :  disable
AutoCnfg  :  disable
ILMI Protocol :
---------------
State      : UNKNOWN
Last Event : Start

U4.13.AXSM.a > dsplns
                                                Medium Medium
Sonet       Line     Line      Line    Frame   Line   Line     Alarm    APS
Line        State    Type      Lpbk   Scramble Coding
```

```
Type      State    Enabled
----------- ----- ------------ ------ -------- ------ --------
--------
-------
1.1            Up  sonetSts48c  Local   Enable    NRZ ShortSMF    Clear
Disable

U4.13.AXSM.a > dspilmi 11 1
Configuration :
------------- :
Port      :       11      SigVpi : 0
Partition :        1      SigVci : 16

IfIndex   : 17635339      S:Keepalive Intvl :      1
SessionId :        1      T:conPoll Intvl   :      5
Ilmi Trap :   enable      K:conPoll InactvFactor : 4

Agent     :   enable      EnFromCtrlr  :  disable
Poll      :   enable      ModLocalAttr :  disable
AddrReg   :  disable      ServReg      :  disable
AutoCnfg  :  disable
ILMI Protocol :
---------------
State      : UNKNOWN
Last Event : Start
```

dnimagrp

Down IMA Group—AXSM-32-T1E1-E

This command administratively disables the IMA group specified by *group*.

Syntax

dnimagrp <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

upimagrp

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Disable the IMA group designated by bay 1, group number 16.

```
MGX8850.2.AXSME.a > dnimagrp 1.16
```

dnlmi

Down Local Management Interface—AXSM, AXSM-XG

De-activates the Local Management Interface (LMI) on the specified logical port (*ifNum*).

Syntax

dnlmi <*ifNum*>

Syntax Description

ifNum	The interface number of the logical port on which to de-activate the LMI.

Related Commands

uplmi

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.9.AXSM.a > dnlmi 2
```

dnln

Down Line—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

De-activate a line on the current card. Refer to the other **dnln** description if necessary.) Before you can de-activate a line using **dnln**, you must take the following steps:

Step 1 Remove connections. Use **delcon** or **delcons**.

Step 2 Remove any resource partitions. Use **dsprscprtn** to see existing partitions and **delrscprtn** to remove partitions.

Step 3 Remove all logical ports. Use **dspports** to see existing logical ports on the line and **delport** to remove logical ports.

Syntax (AXSM, AXSM-E, AXSM-XG)

dnln <*bay.line*>

Syntax Description (AXSM, AXSM-E, AXSM-XG)

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

dspln, **dsplns**, **cnfln**, **upln**

Attributes (AXSM, AXSM-E, AXSM-XG)

Log: yes	State: active	Privilege: GROUP1

Example (AXSM, AXSM-E, AXSM-XG)

De-activate line 1 in bay 1.

```
MGX8850.1.AXSM.a > dnln 1.1
```

Syntax (AXSM-32-T1E1-E)

dnln <*bay.line*>

Syntax Description (AXSM-32-T1E1-E)

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

dspln, **dsplns**, **cnfln**, **upln**

Attributes (AXSM-32-T1E1-E)

Log: yes	State: active	Privilege: ANYUSER

Example (AXSM-32-T1E1-E)

Disable bay 1, line 16:

```
MGX8850.2.AXSME.a > dnln -ds3 1.16
```

dnpath

Down Path—AXSM-XG

Deactivates the specified path (*path_num*).

Syntax

dnpath <*path_num*>

Syntax Description

path_num	Identifies the path you want to deactivate. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.

Related Commands

uppath

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8950.3.AXSMXG.a > dnpath 1.1.2
```

dnport

Down Port—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dnport** command disables (or downs) a logical port and thereby halts all traffic on the logical port. The usual purpose for using **dnport** is troubleshooting. The configuration for the port remains intact whether the logical port is a UNI or an NNI. The command for enabling a downed port is **upport**.

For an NNI, the PXM45 de-routes the failed connections then re-routes them through other trunks. After you re-enable an NNI port through **upport**, you cannot return the re-routed connections to the upped port. The PXM45 routes connections over the trunk as needed.

On a UNI, the connections continue to exist, but remain in the failed state until you enable the port by executing **upport**.

Caution For AXSM-E and AXSM-XG, do not execute this command unless you want to change the SCT configuration. All connection configurations on the port are lost when you execute this command on the AXSM-E or AXSM-XG.

Syntax

dnport <*ifNum*>

Syntax Description

ifNum	A logical port (interface) number. Only one logical port is allowed if the line operates as a UNI or NNI. For the virtual network to network interface (VNNI), multiple ports can exist on a line. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126 Use **dspports** or **dspport** as needed to determine the need to disable a port.

Related Commands

dspport, **dspports**, **upport**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Disable port 1 on the current card.

```
MGX8850.1.AXSM.a > dnport 1
```

dspadjlnalm

Display Adjacent Line Alarms—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dspadjlnalm** command lets you display the alarm status line for the adjacent back card. To acquire the status, enter the bay and line number for the active back card.

> **Note** The **clradjlnalmcnt** command works for only inter-card APS.

Syntax

dspadjlnalm <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

dspadjlnalmcnt, clradjlnalmcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.3.AXSME.a > dspadjlnalm 1.1
 Line Number              : 1.1
 Section Alarm State      : LOS
 Line Alarm State         : Clear
 Path Alarm State         : Clear
 Section Stat Alarm State: CurrentESs,CurrentSESs,CurrentSEFSs
 Line Stat Alarm State    : CurrentSESs,CurrentUASs
 Path Stat Alarm State    : CurrentSESs,CurrentUASs
 LOCD Alarm State         : Clear
 APS  Alarm State         : Major
```

dspadjlnalmcnt

Display Adjacent Line Alarm Counters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dspadjlnalmcnt** command lets you display the alarm counters for the adjacent back card. To acquire the status, enter the bay and line number for the active back card.

Note The **clradjlnalmcnt** command works for only inter-card APS.

Syntax

dspadjlnalmcnt <*bay.line*> <*intvl*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
intvl	The time interval to display (0–96). 0 is the current 15-minute interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 being the oldest 15-minute interval.

Related Commands

dspadjlnalm, clradjlnalmcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.AXSME.a> dspadjlnalmcnt 1.2 1
  Interval Number : 1

  Section PM:
  -----------
  Num of LOSs     :          0
  Num of LOFs     :          0
  ESs             :          1
  SESs            :          0
  SEFSs           :          0
  CVs             :          4

  Line PM:
  -----------
  Num of AISs     :          0
  Num of RFIs     :          0
                         Near End      Far End
  ESs             :          1           0
  SESs            :          0           0
  CVs             :         39           0
  UASs            :          0           0
```

```
Path PM:
-----------
Num of AISs     :         0
Num of RFIs     :         0
                      Near End      Far End
ESs             :         0            0
SESs            :         1            1
CVs             :        25           25
UASs            :         0            0
```

dspalm

Display Alarm—AXSM, AXSM-E, AXSM-32-T1E1-E

Use the **dspalm** command to view the alarms associated with a specified line. See **cnfalm** for a description of the types of alarms you can see. In addition to the configurable alarm types, the output also shows instances of loss of cell delineation (LOCD).

Syntax

dspalm <-ds3 | -e3 | -sonet | -e1> *<bay.Line>*

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card. Ranges: For OC12: 1 For OC3: 1–4 For T3 and E3: 1–8

Related Commands

cnfalm, **clralm**, **dspalms**, **dspalmcnt**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display alarms on OC-12 line 1.1. In this example, the components of a SONET line (section, line, and path) are clear. Also, no instances of loss of cell delineation (LOCD) have occurred.

```
MGX8850.1.AXSM.a > dspalm -sonet 1.1
 Line Number            : 1.1
 Section Alarm State     : LOS
 Line Alarm State        : Clear
 Path Alarm State        : Clear
 Section Stat Alarm State: TotalESs,TotalSESs,TotalSEFSs,CurrentESs,CurrentSESss
 Line Stat Alarm State   : TotalUASs,CurrentUASs
 Path Stat Alarm State   : TotalUASs,CurrentUASs
 LOCD Alarm State        : Clear
 APS  Alarm State        : N/A
```

On another node, the same bay.line shows some of the possible errors: loss of signal (LOS), errored seconds and severely errored seconds, unavailable seconds.

```
MGX8850.1.AXSM.a > dspalm -sonet 1.1
 Line Number            : 1.1
 Section Alarm State     : LOS
 Line Alarm State        : Clear
 Path Alarm State        : Clear
 Section Stat Alarm State: CurrentESs,CurrentSESs,CurrentSEFSs
 Line Stat Alarm State   : CurrentSESs,CurrentUASs
 Path Stat Alarm State   : CurrentSESs,CurrentUASs
 LOCD Alarm State        : Clear
```

Display examples for AXSM-E.

```
MGX8850.11.AXSME.a > dspalm -sonet 1.1
 Line Number            : 1.1
 Section Alarm State     : LOS,LOF
 Line Alarm State        : AIS
 Path Alarm State        : Clear
 Section Stat Alarm State:
TotalESs,TotalSESs,TotalSEFSs,CurrentESs,CurrentSESs,CurrentSEFSs
 Line Stat Alarm State   : TotalUASs,CurrentUASs
 Path Stat Alarm State   : TotalUASs,CurrentUASs
 LOCD Alarm State        : LOCD
 LOCD Alarm State        : Clear

Display examples for AXSM-E.

MGX8850.5.AXSME.a > dspalm -ds3 1.1
Line Number       : 1.1
  Alarm State            : XmtRAI,RcvLOF,RcvLOS,RcvOtherFailure
  Statistical Alarm State: SEFS15minAlarm,SEFS24hrAlarm,UAS15minAlarm,UAS24hrAlarm
  PLCP Alarm State       : Clear
  LOCD Alarm State       : LOCD

MGX8850.9.AXSME.a > dspalm -ds3 1.1
  Line Number            : 1.1
  Alarm State            : XmtFarEndLOF,LOF,LOS
  LOCD Alarm State       : LOCD
```

dspalmcnt

Display Alarm Counters—AXSM, AXSM-E, AXSM-32-T1E1-E

Displays the performance monitoring alarm counters for either a SONET or DS3 line.

Syntax

dspalmcnt -ds3 | -e3 | -plcp | -sonet | -e1 <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

clralmcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the alarm count for T3 line 1 in bay 1.

```
MGX8850.11.AXSM.a > dspalmcnt -ds3 1.1
  Line Num:      2.1
  CurrentLCV :      9109365
  CurrentLES :      13
  CurrentPCV :      1
  CurrentPES :      1
  CurrentPSES:      0
  CurrentSEFS:      11
  CurrentUAS :      0
  Num of LOS :      1
  Num of OOF :      1
  Num of RAI :      0
  Num of CCV :      0
  Num of FE :       0
```

Display SONET line 1 in bay 1.

```
MGX8850.6.AXSM.a > dspalmcnt -sonet 1.1
 Line Num:                       1.1
 Elapsed Time (in sec):            1634
Section PM:
-----------
  Num of LOSs:                  1
  Num of LOFs:                  1
  CurrentESs:                   0
  CurrentSESs:                  0
  CurrentSEFSs:                 1
  CurrentCVs:                   1
Line PM:
```

```
--------
  Num of AISs:         0
  Num of RFIs:         0
  Near End                           Far End
  CurrentESs :              1          CurrentESs : 1
  CurrentSESs:              0          CurrentSESs: 0
  CurrentCVs :              1          CurrentCVs : 1
  CurrentUASs:              0          CurrentUASs: 0
Path PM:
--------
  Num of AISs:                      1
  Num of RFIs:                      1
  Near End                           Far End
  CurrentESs :              0          CurrentESs : 0
  CurrentSESs:              0          CurrentSESs: 0
  CurrentCVs :              0          CurrentCVs:  0
  CurrentUASs:              0          CurrentUASs: 0
```

For AXSM-E, examples show the performance monitoring alarm counters of a DS3, and SONET, line for current 15 minute interval. Counters with description "Num of . . ." are counters for the current 15 minute interval.

```
MGX8850.5.AXSME.a > dspalmcnt -ds3 1.1

  Line Number:      1.1
  Elapsed Time(in sec): 188
  Num of LOS :     0
  Num of OOF :     0
  Num of RAI :     0
  Near End                             Far End
  CurrentCCVs    : 0                   CurrentCCVs     :  0
  CurrentCESs    : 0                   CurrentCESs     :  0
  CurrentCSESs   : 0                   CurrentCSESs    :  0
  CurrentUASs    : 189                 CurrentUASs     :  0
  CurrentLCV     : 0
  CurrentLES     : 0
  CurrentPCV     : 0
  CurrentPES     : 0
  CurrentPSES    : 0
  CurrentSEFS    : 189
  CurrentLSES    : 0
  Current24HrLCV : 0
  Current24HrLES : 0
  Current24HrPCV : 0
  Current24HrPES : 0
  Current24HrPSES: 0
  Current24HrSEFS: 29700
  Current24HrUAS : 29700
  Current24HrCCV : 0
  Current24HrCES : 0
  Current24HrCSES: 0
  Current24HrLSES: 0

MGX8850.11.AXSME.a > dspalmcnt -sonet 1.1
Line Number         : 1.1
Elapsed Time(in sec): 298
Section PM:
-----------
  Num of LOSs     : 0
  Num of LOFs     : 0
  CurrentESs      : 299
  CurrentSESs     : 299
  CurrentSEFSs    : 299
  CurrentCVs      : 0
```

```
  Current24HrESs  : 64795
  Current24HrSESs : 64795
  Current24HrSEFSs: 64795
  Current24HrCVs  : 0
Line PM:
--------
  Num of AISs: 0
  Num of RFIs: 0
  Near End                          Far End
  CurrentESs     : 0                CurrentESs     : 0
  CurrentSESs    : 0                CurrentSESs    : 0
  CurrentCVs     : 0                CurrentCVs     : 0
  CurrentUASs    : 299              CurrentUASs    : 0
  Current24HrESs : 0                Current24HrESs : 0
  Current24HrSESs: 0                Current24HrSESs: 0
  Current24HrCVs : 0                Current24HrCVs : 0
  Current24HrUASs: 64795            Current24HrUASs: 0
Path PM:
--------
  Num of AISs: 0
  Num of RFIs: 0
  Near End                          Far End
  CurrentESs     : 0                CurrentESs     : 0
  CurrentSESs    : 0                CurrentSESs    : 0
  CurrentCVs     : 0                CurrentCVs     : 0
  CurrentUASs    : 299              CurrentUASs    : 0
  Current24HrESs : 0                Current24HrESs : 0
  Current24HrSESs: 0                Current24HrSESs: 0
  Current24HrCVs : 0                Current24HrCVs : 0
  Current24HrUASs: 64795            Current24HrUASs: 0

MGX8850.5.AXSME.a > dspalmcnt -ds3 1.1

  Line Number:      1.1
  Elapsed Time(in sec): 520

  Near End                           Far End
  CurrentUASs     : 0                CurrentUASs     : 0
  CurrentLESs     : 0                CurrentLESs     : 0
  CurrentESs      : 0                CurrentESs      : 0
  CurrentSESs     : 0                CurrentSESs     : 0
  CurrentSEFSs    : 0                CurrentSEFSs    : 0
  CurrentPCVs     : 0                CurrentPCVs     : 0
  CurrentLCVs     : 0
```

dspalms

Display Alarms—AXSM, AXSM-E, AXSM-32-T1E1-E

Display all line-related alarms on the card. RFC 2258 describes the alarm categories. The display can easily scroll for many pages if more than one line is active. See **cnfalm** for a description of types of alarms you might see. In addition to the alarms from **cnfalm**, the **dspalms** command also displays instances of loss of cell delineation (LOCD).

Syntax

dspalms

Syntax Description

No parameters

Related Commands

dspalm, clralm

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display alarms for the lines on the current AXSM card.

```
MGX8850.1.AXSM.a > dspalms

   Line Number: 1.1
   Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   Statistical Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   LOCD Alarm : Clear
   APS Alarm  : Major

   Line Number: 1.2
   Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   Statistical Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   LOCD Alarm : Clear
   APS Alarm  : Clear
```

```
   Line Number: 2.1
   Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   Statistical Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   LOCD Alarm : Clear
   APS Alarm  : N/A

   Line Number: 2.2
   Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   Statistical Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   LOCD Alarm : Clear
   APS Alarm  : N/A

   Line Number: 1.1 Adj APS
   Alarm State
      Section : LOS
      Line    : Clear
      Path    : Clear
   Statistical Alarm State
      Section : CurrentSESs,CurrentSEFSs
      Line    : CurrentSESs
      Path    : CurrentSESs
   LOCD Alarm : Clear
   APS Alarm  : Major

   Line Number: 1.2 Adj APS
   Alarm State
      Section : Clear
      Line    : Clear
      Path    : Clear
   Statistical Alarm State

      Section : Clear
      Line    : Clear
      Path    : Clear
   LOCD Alarm : Clear
   APS Alarm  : Clear
```

Display alarms for the lines on the current AXSM-E card.

```
MGX8850.11.AXSME.a > dspalms
---------------------------------------------
Line Number: 1.1
Alarm State
   Section : LOS,LOF
   Line    : AIS
   Path    : Clear
   LOCD    : LOCD
Statistical Alarm State
   Section : TotalESs,TotalSESs,TotalSEFSs,CurrentESs,CurrentSESs,CurrentSEFSs
   Line    : TotalUASs,CurrentUASs
   Path    : TotalUASs,CurrentUASs
```

```
Line Number: 1.2
Alarm State
   Section : LOS,LOF
   Line    : AIS
   Path    : Clear
   LOCD    : LOCD
Statistical Alarm State
   Section : TotalESs,TotalSESs,TotalSEFSs,CurrentESs,CurrentSESs,CurrentSEFSs
   Line    : TotalUASs,CurrentUASs
   Path    : TotalUASs,CurrentUASs

Line Number: 1.3
Alarm State
   Section : Clear
   Line    : Clear
   Path    : Clear
   LOCD    : Clear
Statistical Alarm State
   Section : Clear
   Line    : Clear
   Path    : Clear

Line Number: 1.4
Alarm State
   Section : Clear
   Line    : Clear
   Path    : Clear
   LOCD    : Clear
Statistical Alarm State
   Section : Clear
   Line    : Clear
   Path    : Clear
```

dspapsbkplane

Display APS Backplane—AXSM, AXSM-E, AXSM-XG

Displays whether or not the APS mini-backplane is properly seated with the back cards.

When successful, this command displays:

```
BackPlane:ENGAGED
```

When not successful, this command displays:

```
BackPlane:NOT ENGAGED
```

See the **addapsln** command for an explanation of Automatic Protection Switching (APS).

Refer to the *Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.2* for information on installing the APS assembly to the backplane.

Syntax

dspapsbkplane

Syntax Description

No parameters

Related Commands

addapsln, cnfapsln, delapsln, dspapsln, dspapslns, switchapsln, clrbecnt, dspbecnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Example of executing **dspapsbkplane** when an APS assembly is successfully installed to the backplane.

```
MGX8850.1.AXSM.a > dspapsbkplane

Line-ID   Primary Card Signal Status       Secondary Card Signal Status
                    Slot #1                                    Slot #2
  1.1               PRESENT                                    PRESENT
  1.2               PRESENT                                    ABSENT
  2.1               PRESENT                                    ABSENT
  2.2               PRESENT                                    ABSENT

Remote Front Card : PRESENT
Top Back Card     : ENGAGED
Bottom Back Card  : NOT-ENGAGED
```

Example of executing **dspapsbkplane** when an APS assembly is not successfully installed to the backplane.

```
MGX8850.5.AXSME.a > dspapsbkplane
Top Bay: APS Back Plane Not Engaged or Adjacent Back Card Not Present.
```

dspapsln

Display APS Line—AXSM, AXSM-E, AXSM-XG

Displays the configuration of an APS line. This command can be executed for either a working line or a protection line.

See the **addapsln** command for an explanation of Automatic Protection Switching (APS).

Note Neither the **dspapsln** nor the **dspapslns** command shows the APS-related mode of an AXSM card. To see the APS mode of an AXSM, run **dspcd** on the CLI of the AXSM. The field labeled "Card Operating Mode" shows either AXSM-A or AXSM-B.

Syntax

dspapsln <*working-slot.bay.line*>

Syntax Description

working-slot.bay.line	Identity of the working line with the format *slot.bay.line*.
bay.line	Identifies the slot number, the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

addapsln, cnfapsln, delapsln, dspapslns, switchapsln, dspapsbkplane, clrbecnt, dspbecnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the APS configuration for slot 1, bay 1, line 1.

Note The "Top Bay" or "Bottom Bay" field appears according to the bay you specify in the command. The status of either "ENGAGED" or "DISENGAGED" indicates whether or not the minibackplane for the specified shelf is properly seated. If the status is disengaged, you must reset the minibackplane.

```
MGX8850.1.AXSM.a > dspapsln 13.1.1
  Working Section 1      : 13.1.1         Working Section 2      : 14.1.1
  Provisioned Arch       : 1+1AnxB        Provisioned Direction  : bi
  Operational Arch       : 1+1AnxB        Operational Direction  : bi
  Active Line            : Working Sec 1   WTR(min)               : 5
  Primary Section        : Working Sec 1   Secondary Section      : Working Sec 2
  SFBer 10^-n            : 3              SDBer 10^-n            : 5
  Revertive              : No             Last User Switch Req   : No Request
  Bridge State           : Set            Selector State         : Working Sec 1
  Protection Line Pending Request   : SignalFailLowPriority
  Working Line Pending Request      : None
```

```
APS Trouble Mask                  : None
                Bit Map    Req Field            Chan Field
Transmit K1     0x0        No Request           Null Channel
Receive K1      0x0        No Request           Null Channel
Current Request 0x0        No Request           Null Channel
                Bit Map    Chan Field           Arch Field      Dir Mode Field
Transmit K2     0x10       Working Sec 1        1+1             Undefined
Receive K2      0x4        Null Channel         1+1             UNI
Working Sec 1 State    : OK             Working Sec 2 State    : SF-L
Protocol               : ITU
Top Bay                           : ENGAGED
```

Display the APS configuration for the AXSM-E in slot 6.

```
MGX8850.4.AXSME.a > dspapsln 4.1.2
  Working Section 1      : 4.1.2          Working Section 2      : 5.1.2
  Provisioned Arch       : 1+1AnxB        Provisioned Direction  : bi
  Operational Arch       : 1+1AnxB        Operational Direction  : bi
  Active Line            : Working Sec 2  WTR(min)               : 5
  Primary Section        : Working Sec 2  Secondary Section      : Working Sec 1
  SFBer 10^-n            : 3              SDBer 10^-n            : 5
  Revertive              : No             Last User Switch Req   : Clear
  Bridge State           : Set            Selector State         : Working Sec 2
  Working Sec 1 State    : OK             Working Sec 2 State    : OK
  Protocol               : ITU
  Alarms                 : Clear
                        Bit Map        Req/Chan/Mode
  External     reqField   0x0          NoRequest
  External    chanField   0x0          Null Channel
  Internal     reqField   0x0          NoRequest
  Internal    chanField   0x0          Null Channel
  Transmit K1  reqField   0x0          NoRequest
  Transmit K1 chanField   0x0          Null Channel
  Receive K1   reqField   0x0          NoRequest
  Receive K1  chanField   0x0          Null Channel
  Transmit K2 chanField   0x2          Working Section 2
  Transmit K2 modeField   0x0          Undefined
  Receive K2  chanField   0x2          Working Section 2
  Receive K2  modeField   0x0          Undefined
```

Note The **dspapsln** command output is identical on AXSM-E and AXSM-XG card.

dspapslns

Display APS Lines—AXSM, AXSM-E, AXSM-XG

Displays all working and protection APS lines on a card. This command can be executed only on an active card. After identifying a particular APS line, you can use **dspapsln** to view details about the line.

See the **addapsln** command for an explanation of Automatic Protection Switching (APS).

Note Neither the **dspapsln** nor the **dspapslns** command shows the APS-related mode of an AXSM card. To see the APS mode of an AXSM, run **dspcd** on the CLI of the AXSM. The field labeled "Card Operating Mode" shows either AXSM-A or AXSM-B.

Syntax

dspapslns

Syntax Description

No parameters

Related Commands

addapsln, cnfapsln, delapsln, dspapsln, switchapsln, dspapsbkplane, clrbecnt, dspbecnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display all lines with an APS configuration on the current AXSM.

```
MGX8850.1.AXSM.a > dspapslns
Working Prot.  Conf    Oper    Active  WLine PLine WTR   Revt Conf Oper LastUser  Conf
Index   Index  Arch    Arch    Line    State State (min)      Dir  Dir  SwitchReq Protocol
------  -----  ----    ----    -----   ----- ----- ----- ---- ---- ---- --------- --------
13.1.1  14.1.1 1+1AnxB 1+1AnxB working    OK  SF-L     5   No   bi   bi  No Request    ITU
13.1.2  14.1.2 1+1     1+1     working    OK    OK     5   No  uni  uni  No Request Bellco
```

Display all lines with an APS configuration on the current AXSM-E.

```
MGX8850.4.AXSME.a > dspapslns
Note: For ITU-T AnnexB APS, Working Line means Working Section-1 and
      Protection Line means Working Section-2

Working Prot.   Conf    Oper     Active   WLine   PLine WTR   Revt Dir Oper LastUser    Conf
Index   Index   Arch    Arch     Line     State   State (min)          Dir  SwitchReq   Protocol
------- ------  -----   -----    -------  -----   ----- ----- ---- --- ---- ----------  -------------
  4.1.2   5.1.2  1+1AnxB 1+1AnxB protect    OK     OK     5    No  bi  bi       Clear             ITU
  4.1.3   5.1.3   1+1Str  1+1    working    OK     SF     5    No uni uni       Clear   Bellcore-GR253
```

Note The **dspapslns** command output is identical on AXSM-E and AXSM-XG card.

dspatlasdiagcnfcstat

Display Atlas Diagnostics Configuration Statistics—AXSM

Use the **dspatlasdiagcnfcstat** command to display the Atlas diagnostics configuration connection statistics for the specified port.

Note The **dspatlasdiagcnfcstat** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspatlasdiagcnfcstat <*ifNum*>

Syntax Description

ifNum	The logical interface (port) number, in the range from 1 through 60.

Related Commands

cnfatlaslndiagstat, **dspatlasdiagcstat**, **dspatlasdiagstatcnf**, **dspatlaslndiagstat**

Attributes

Log: no	State: active/ standby	Privilege: SERVICE_GP

Example

Display the Atlas diagnostics configuration connection statistics for port 11.

```
M8850_LA.1.AXSM.a > dspatlasdiagcnfcstat 11
Ingress Cell Counting Configuration 1
Cells with PTI=111(F5 only) and VCI=7 to 15 (F4 only):CLP0 stream
RM cells :  CLP0 stream
OAM cells: CLP0 stream
User Cells: CLP0 stream
Ingress Cell Counting Configuration 2
Cells with PTI=111(F5 only) and VCI=7 to 15 (F4 only):CLP1 stream
RM cells :  CLP1 stream
OAM cells: CLP1 stream
User cells: CLP1 stream
Egress Cell Counting Configuration 1
Cells with PTI=111(F5 only) and VCI=7 to 15 (F4 only):CLP0 stream
RM cells :  CLP0 stream
OAM cells: CLP0 stream
User Cells: CLP0 stream
Egress Cell Counting Configuration 2
Cells with PTI=111(F5 only) and VCI=7 to 15 (F4 only):CLP1 stream
RM cells :  CLP1 stream
OAM cells: CLP1 stream
User cells: CLP1 stream
Non compliant Cell Counting Configuration 1
```

```
Discarded CLP0 cells

Type <CR> to continue, Q<CR> to stop:
Non compliant Cell Counting Configuration 2
Discarded CLP0+1 cells
Non compliant Cell Counting Configuration 3
Non compliant CLP0+1 cells

M8850_LA.1.AXSM.a >
```

dspatlasdiagcstat

Display Atlas Diagnostics Statistics—AXSM

Use the **dspatlasdiagcstat** command to display the Atlas diagnostics connection statistics for the specified port.

Note The **dspatlasdiagcstat** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspatlasdiagcstat <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	The logical interface (port) number, in the range from 1 through 60.
vpi	The VPI in the range 1–4095.
vci	The VCI in the range 1–65535.

Related Commands

cnfatlaslndiagstat, dspatlasdiagcnfcstat, **dspatlasdiagstatcnf**, **dspatlaslndiagstat**

Attributes

Log: no	State: active/ standby	Privilege: SERVICE_GP

Example

Display the Atlas connection statistics for Port 11, vpi 100, VCI 100.

```
M8850_LA.1.AXSM.a > dspatlasdiagcstat 21 100 100
```

dspatlasdiagstatcnf

Display Atlas Diagnostics Statistics Configuration—AXSM

Use the **dspatlasdiagstatcnf** command to display the current Atlas diagnostics statistics configuration for the specified line.

Note The **dspatlasdiagstatcnf** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspatlasdiagstatcnf <*bay.line*>

Syntax Description

bay.line	The line number for which to display the frame receive diagnostics statistics. **Note** Enter the **dsplns** command to display valid numbers for all lines configured on the current AXSM.

Related Commands

cnfatlaslndiagstat, dspatlasdiagcnfcstat, **dspaltlasdiagcstat**, **dspatlaslndiagstat**

Attributes

Log: no	State: active/ standby	Privilege: SERVICE_GP

Example

Display the current Atlas diagnostics statistics configuration for line 1 on the current AXSM back card the top bay.

```
M8850_LA.1.AXSM.a > dspatlasdiagstatcnf 1.1
         discard stats[0]:1
         discard stats[1]:2
         discard stats[2]:3

M8850_LA.1.AXSM.a >
```

dspatlaslndiagstat

Display Atlas Line Diagnostics Statistics—AXSM

Use the **dspatlaslndiagstat** command to display the current Atlas line diagnostics statistics for the specified line.

Note The **dspatlaslndiagstat** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspatlaslndiagstat <*bay.line*>

Syntax Description

bay.line	The line number for which to display the frame receive diagnostics statistics. **Note** Enter the **dsplns** command to display valid numbers for all lines configured on the current AXSM.

Related Commands

cnfatlaslndiagstat, dspatlasdiagcnfcstat, **dspaltlasdiagcstat**, **dspatlasdiagcnfstat**

Attributes

Log: no	State: active/ standby	Privilege: SERVICE_GP

Example

Display the Atlas line diagnostics statistics for line 1 on the current AXSM back card the top bay.

```
M8850_LA.1.AXSM.a > dspatlaslndiag 1.1
Device Count: idle Cell count:0
         ing InputCell count: 93
         ing OutputCell count: 93
         egr InputCell count: 95
         egr OutputCell count: 95
Phy Counts:Ingress: CLP0 cell count: 0
         CLP1 cell count: 0
         Valid OAM count: 0
         Valid RM count: 0
         Errored OAM and RM count: 0
         invalid VPI/VCI/PTI count: 0
         non zero GFC: 0
         last unknown VCI: 0
         last unknown VPI: 0
Phy Counts:Egress:  CLP0 cell count:0
         CLP1 cell count:0
         Valid OAM count:0
         Valid RM count:0
```

```
          Errored OAM and RM count:0
          invalid VPI/VCI/PTI count:0

M8850_LA.1.AXSM.a >
```

dspatmimagrp

Display ATM IMA Group—AXSM-32-T1E1-E

Displays the ATM cell header information and whether the alarm indication signal (AIS) is enabled or disabled at the far end.

Syntax

dspatmimagrp <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

cnfatmimagrp

Attributes

Log: yes	State: active	Privilege: ANYUSER

Example

```
MGX8850.13.AXSME.a > dspatmimagrp 1.1

GrpNum   HCScoset PayloadScramble NullCellHdr NullCellPayload   AIS
 ------- --------- --------------- ----------- --------------- -------
      1.1   Enable          Enable  0x00000001              6a Enable
```

dspatmlayer

Display ATM Layer—AXSM-XG

Displays the ATM cell layer parameters for the specified path (*path_num*).

Syntax

dspatmlayer <*path_num*>

Syntax Description

path_num	Identifies the path whose ATM cell later parameters you want to display. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.

Related Commands

cnfatmlayer

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

```
MGX8950.3.AXSMXG.a > dspatmlayer 1.1.1.1
 PathNum  HCScoset PayloadScramble NullCellHdr NullCellPayload
 ------- --------- --------------- ----------- ---------------
 1.1.1.1   Enable          Enable  0x00000001            0x6a
```

dspatmlayercnt

Display ATM Layer Counters—AXSM-XG

Displays the ATM cell layer interval counters on the specified path (*path_num*).

Syntax

dspatmlayercnt <*path_num*> <*intvl*>

Syntax Description

path_num	Identifies the path whose ATM cell layer interval counters you want to display. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.
intvl	The time interval to display (0–96). 0 is the current 15-minute and 24-hour interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 being the oldest 15-minute interval.

Related Commands

cnfatmlayer

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

```
MGX8950.3.AXSMXG.a > dspatmlayercnt 1.1.1 1
Path               : 1.1.1
Interval           : 1

                            Ingress           Egress
CLP0 Cells                 : 0                  0
CLP1 Cells                 : 0                  0
Valid OAM Cells            : 0                  0
Err OAM Cells              : 0                  0
Rcv Valid RM Cells         : 0                  0
Invalid VPI/VCI/PTI Cells  : 0
Rcv Idle Cells             : 0
Non-zero GFC Cells         : 0
Last Unknown VPI           : 0
Last Unknown VCI           : 0
Discard HecErr Cells       : 0
Corrected HecErr Cells     : 0
```

dspatmln

Display ATM Line—AXSM, AXSM-E, AXSM-32-T1E1-E

Displays the cell header configuration for the line that was set using **cnfatmln**. The display indicates NNI or UNI cell headers.

For IMA, it displays the ATM cell header information and whether the alarm indication signal (AIS) is enabled or disabled at the far end.

Syntax

dspatmln <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

cnfatmln, clratmlncnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the line configuration for line 1 of the AXSM-1-2448.

```
MGX8850.1.AXSM.a > dspatmln 1.1

 line  HCScoset PayloadScramble NullCellHdr NullCellPayload
----------------------------------------------------------------------
   1.1   Enable          Enable    1a1a1a1a              aa
```

Display the ATM line configuration for line 1 of the AXSM-E.

```
MGX8850.1.9.AXSME.a > dspatmln 1.1

 line  HCScoset PayloadScramble NullCellHdr NullCellPayload
------------------------------------------------------------------------
   1.1   Enable          Enable    00000000              6a
```

For an IMA line, display if AIS enabled or disable at the far end.

```
MGX8850.1.9.AXSME.a > dspatmln 1.16

LineNum  HCScoset PayloadScramble NullCellHdr NullCellPayload   AIS
 ------- --------- --------------- ----------- --------------- -------
     1.16   Enable          Enable  0x00000001              6a Enable
```

dspautolndiag

Display Auto Line Diagnostics—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays the status of auto line diagnostic feature on card.

Syntax

dspautolndiag

Syntax Description

No parameters

Related Commands

cnfautolndiag

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.5.AXSME.a > dspautolndiag
Auto Line Diagnostics : Disabled

MGX8850.5.AXSME.a >
```

dspbecnt

Display Bit Error Count—AXSM, AXSM-XG

The **dspbecnt** command lets you display the APS-related bit error counters. The syntax for the AXSM and PXM card types is slightly different. See the Syntax section for each type.

Syntax

dspbecnt <*working-bay.line*>

Syntax Description

working-bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

addapsln, clrbecnt, cnfapsln, delapsln, dspapsln, dspapslns, switchapsln, dspapsbkplane

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.5.AXSME.a > dspbecnt 1.3
Working Section 1 4.1.3          :
    24 Hour Bit Error Count   0
    15 Minute Bit Error Count 130
    15 Second Bit Error Count 0
Working Section 2 5.1.3          :
    24 Hour Bit Error Count   0
    15 Minute Bit Error Count 30413
    15 Second Bit Error Count 2307
```

dspbert

Display Bit Error Rate Test—AXSM-E, AXSM-32-T1E1-E

Displays the status, configuration, and data for the current Bit Error Rate Test (BERT). Only one BERT session can run on a particular bay at a time.

This command displays the following information:

- The user Id of the person who started the BERT session
- Start date and time
- Current date and time
- Physical slot number running BERT
- Line number
- Port number, if applicable (Port is an optional parameter for configuring a BERT session.)
- DS0 speed
- Type of test

The screen layout includes the following information:

- One or more rows for the results of the BERT: bit count, bit error count, bit error rate, and so on.
- Whether and how many times errors were injected.

Syntax

dspbert <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

dspbertstats

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.11.AXSME.a > dspbert 1.1
Line                 : 1.1
BERT Admin Status    : Up
Operational Status   : OutOfSync
BERT Pattern         : AllOnes
Error Insertion Rate: OneInHundred
Tx Pattern Invert    : NotInverted
Rx Pattern Invert    : NotInverted
Start Date           : Sep 05 2002 21:28:31
```

dspbertstats

Display Bit Error Rate Test Statistics—AXSM-E, AXSM-32-T1E1-E

Displays the bit error rate test statistics.

Syntax

dspbertstats <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

dspbert

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.5.AXSME.a > dspbertstats 1.1
    Bert Bits        Bit Errors Errors
    Line Received    Received  Injected
    ---- ----------  ---------- --------
     1.1 0           0  0
```

dspbucketcstat

Display Bucket Connection Statistics—AXSM

Use the **dspbucketcstat** command to display the connection statistics for the specified connection.

Note The **dspbucketcstat** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspbucketcstat <*ifNo*> <*vpi*> <*vci*>

Syntax Description

ifNo	The logical interface (port) number, in the range from 1 through 64.
vpi	The VPI in the range 1–4095.
vci	The VCI in the range 1–65535.

Related Commands

clrbucketcstat

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display the connection statistics for Port 11, VPI 50, VCI 50.

```
D3.12.AXSM.a > dspbucketcstat 11 50 50

Ingress:
Clp0 Cells                  :40
Clp1 cells                  :0
Discarded CLP0 cells        :0
Total discarded cells       :0
Total Non compliant cells   :0
EFCI cells                  :0
EOF cells                   :0

Egress:
Clp0 Cells                  :40
Clp1 cells                  :0
EFCI cells                  :0
EOF cells                   :0

D3.12.AXSM.a >
```

dspcd

Display Card—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspcd** command to display details about a card. On an AXSM or any other service module, you can only display details for that service module. On a PXM, you can display information about the PXM or another card. Different card types result in variations in the display. (See the Examples section.)

A list of information in the **dspcd** output follows:

- Serial numbers.
- Front and back card types and the status of each.
- Runtime and boot firmware revision numbers. (See the **loadrev** description for an explanation of how to interpret the revision field.)
- Status, possibly including the reason for the last reset and state of the integrated alarm.
- When **dspcd** is entered on the CLI of a service module:
  - A count of configured lines, ports, and connections
  - Card-level SCT number
  - The APS-related mode of an AXMS/A or AXSM/B

The **dspcd** display shows the physical lines that constitute a *port group* and the maximum number of connections in that port group. A port group consists of one to many physical lines. This maximum connection count is a function of the line type (OC-3, OC-12, and so on). The port group information also shows the number of existing SVCs, SPVCs, and SPVPs. This part of the **dspcd** output can help you configure resource partitions by showing the maximum number of supported connections. If a particular resource partition has close to the maximum supported by hardware on a line, few or no connections would be possible in another partition on the same line.

Note The total number of connections in the **dspcd** output includes *control* VCs. The types of control VCs are SSCOP, PNNI-RCC, and ILMI (if ILMI is enabled). To see connection counts that do not include control VCs, use **dsppnport**.

Syntax

dspcd

Syntax Description

No parameters

Related Commands

dspcds, **dsppnport**, **dspversion**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example (AXSM)

```
MGX8850.2.AXSM.s > dspcd
                    Front Card          Upper Card          Lower Card
                    ----------          ----------        ------------

Card Type:          AXSM-4-622          SMFIR-2-622         SMFIR-2-622
State:              Standby             Present             Present
Serial Number:      SAK03500088         SBK0446006S         SBK04460020
Boot FW Rev:        3.0(0.171)P2        ---                 ---
SW Rev:             3.0(0.171)P2        ---                 ---
800-level Rev:      M6                  A1                  A1
Orderable Part#:    800-5774-5          800-5383-1          800-5383-1
PCA Part#:          73-4504-2           73-4125-1           73-4125-1
CLEI Code:          1234567890          BAI9ADTAAA          BAI9ADTAAA
Reset Reason:       Power ON Reset

Card Operating Mode: AXSM-A

SCT File Configured Version: 1

SCT File Operational Version: 1

Card SCT Id: 5

#Lines #Ports #Partitions   #SPVC   #SPVP    #SVC
------ ------ ----------- ------- ------- -------
     4      3           5       0       0       3

Port Group[1]:
#Chans supported:32512  Lines:1.1
Port Group[2]:
#Chans supported:32512  Lines:1.2
Port Group[3]:
#Chans supported:32512  Lines:2.1
Port Group[4]:
#Chans supported:32512  Lines:2.2

MGX8850.2.AXSM.s >
```

Example (AXSM-32-T1E1-E)

```
MGX8850.14.AXSME.a > dspcd
                    Front Card          Upper Card          Lower Card
                    ----------          ----------        ------------

 Card Type:          AXSM-32-T1E1-E      RBBN-16-T1E1        ---
 State:              Active              Present             Absent
 Serial Number:      SAG05415T3N         SAG0628A1U3         ---
 Boot FW Rev:        3.0(10.99)A         ---                 ---
 SW Rev:             3.0(10.10)D         ---                 ---
 800-level Rev:      02                  03                  ---
 Orderable Part#:    800-06472-05        800-21805-02        000-00000-00
 PCA Part#:          73-4419-03          73-8214-02          00-0000-00
 CLEI Code:          0                   0                   ---

 Reset Reason:Power ON Reset
 Card Summary:

 Card SCT Id: 0 !DefaultSCT used!

 #Lines #Ports #Partitions
```

```
  ------ ------ -----------
       3      0           0
               #SPVC  #SPVP   #SVC  #MaxConns
              ------ ------ ------   --------
 Upper Card :      0      0      0      32096 Shared with lower card
 Lower Card :      0      0      0      32096 Shared with upper card

 FC Operation Mode:  CARD_OPER_MODE_T1

MGX8850.14.AXSME.a >
```

Example (AXSM-XG)

```
MGX8850.2.AXSMXG.a > dspcd
                    Front Card          Upper Card          Lower Card
                    ----------          ----------        ------------

Card Type:          AXSM-16-155-XG      SMF-8-155-SFP       SMF-8-155-SFP
State:              Active              Present             Present
Serial Number:      SAD083500NU         SAD080605S1         SAG0709763H
Boot FW Rev:        5.0(10.200)         ---                 ---
SW Rev:             5.1(90.221)D        ---                 ---
800-level Rev:      A0                  A0                  02
Orderable Part#:    800-20821-06        800-21518-03        800-21518-03
PCA Part#:          73-8000-06          73-8095-03          73-8095-03
CLEI Code:          BA9A680EAA          BA7AHH0DAA          0


SFP Information:
Line FRU Type          Vendor Name      Part #           Rev  Serial #
---- ----------------- ---------------- ---------------- ---- ----------------

Line FRU Type          Vendor Name      Part #           Rev  Serial #
---- ----------------- ---------------- ---------------- ---- ----------------

Reset Reason:Reset from PXM
Card Summary:
Card SCT Id: -1 !DefaultSCT used!

Type <CR> to continue, Q<CR> to stop:

#Lines #Paths #Ports #Partitions
------ ------ ------ -----------
     0      0      0           0

Type <CR> to continue, Q<CR> to stop:

              #SPVC  #SPVP   #SVC  #MaxConns
             ------ ------ ------   --------
Upper Card :      0      0      0     126976
Lower Card :      0      0      0     126976


FC Operation Mode:  CARD_OPER_MODE_16_OC3

Reserved FC Type Before Hardware Upgrade:  AXSM


MGX8850.2.AXSMXG.a >
```

dspcdbucketcnt

Display Cell Counts for the Card—AXSM

The **dspcdbucketcnt** command shows the following cell-related counts:

- Cells transferred between the card and the backplane
- Cells from the QE 48
- CLP0 and CLP1 cells that the card dropped
- Invalid, errored, and unsupported OAM cells
- Errored RM cells

In addition to the other bucket command on the AXSM (**dsplnbucketcnt**), the display commands for the switch planes on the PXM45 may help you analyze cell flows. (See the **dspxbar**-type commands.)

Syntax

dspcdbucketcnt

Syntax Description

No parameters

Related Commands

dsplnbucketcnt, all the **dspxbar**-type of commands except **dspxbarstatus**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the bucket counters for the current AXSM.

```
MGX8850.12.AXSM.a > dspcdbucketcnt
          cells to backplane(QLSI) : 0
          cells from QE 48 : 5347
          cells from backplane(QLSI) : 6917
          CLP0 cells dropped : 0
          CLP1 cells dropped : 0
          undefined cells from port : 0
          errored OAM from port : 0
          invalid OAM from port : 0
          unsupported OAM from port : 0
          errored RM cells from port :0
```

dspcdcnt

Display Card Counters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays the number of cells transferred between the service module and the switching planes. (Synonyms for switching plane are crossbar, xbar, and switch fabric.) One switch fabric is implemented in hardware by one ASIC. The **dspcdcnt** command primarily applies to debugging.

The **dspcdcnt** command displays the following information:

- Cells transferred between the service module and each of the switch planes within the total array of switch planes.
- Total cells transferred between the service module and the backplane.
- Cells to and from QE48. (AXSM)
- Cells to and from QE1210. (AXSM-E, AXSM-XG)
- Undefined cells.
- Total number of CLP0 and CLP1 cells that have been discarded.
- Errored, invalid, and unsupported OAM cells.
- Errored RM cells.
- Cells transferred between and individual switch plane and each slot. This information is centered on the switch fabric itself rather than the card. Each switch fabric can route cells to and from any slot, so the display includes this information for each switching plane.

Syntax

dspcdcnt

Related Commands

clrcdcnt (on the AXSM), **dspxbar**, **dspdevalms**, **dspdeverrhist**, **dspxbarerrthresh**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example (AXSM)

Display the cell transfers between the current AXSM and the switch planes (crossbar planes).

```
MGX8850.11.AXSM.a > dspcdcnt
Ingress cells to xbar Egress cells from xbar
-------------------- ---------------------
plane 1 : 0000000000000000326416 0000000000000000325869
plane 2 : 0000000000000000326415 0000000000000000325890
plane 3 : 0000000000000000217610 0000000000000000217413
plane 4 : 0000000000000000000000 0000000000000000000000
plane 5 : 0000000000000000217611 0000000000000000217433
plane 6 : 0000000000000000326417 0000000000000000325996
plane 7 : 0000000000000000326417 0000000000000000325996
plane 8 : 0000000000000000000000 0000000000000000000000
Ingress cells to destination slot
---------------------------------------------------------------
```

```
slot 01: 0000000000000000000000 slot 02: 0000000000000000000000
slot 03: 0000000000000000000000 slot 04: 0000000000000000000000
slot 05: 0000000000000000000000 slot 06: 0000000000000000000000
slot 07: 0000000000000000004036 slot 08: 0000000000000000000000
slot 09: 0000000000000000000000 slot 10: 0000000000000000000000
slot 11: 0000000000000001736851 slot 12: 0000000000000000000000
slot 13: 0000000000000000000000 slot 14: 0000000000000000000000

Ingress cells Egress cells
------------------------------------ ---------------------------
To backplane: 0000000000000001740886 From backplane:
0000000000000001738597
From QE : 0000000000000001740888 To QE:
0000000000000001738599
QE Total (Ingress + Egress)
-----------------------------------------------------
Undefined cell type : 0000000000000000000000
Err OAM (bad CRC) cells : 0000000000000000000000
Invalid OAM type or function: 0000000000000000000000
Unsupported OAM cells : 0000000000000000000000
Err RM (bad CRC) cells : 0000000000000000000000
QE congestion discard CLP0 : 0000000000000000000000
QE congestion discard CLP1 : 0000000000000000000000
```

Display cell transfers between the current AXSM and the switching planes on the XM60s.

```
MGX8850.3.AXSM.a > dspcdcnt
Ingress Count                          Egress Count
-------------                          ------------
Cells to xbar plane[1]:         8702  Cells from xbar plane[1]: 8733
Cells to xbar plane[2]:         8702  Cells from xbar plane[2]: 8627
Cells to xbar plane[3]:        10443  Cells from xbar plane[3]: 10503
Cells to xbar plane[4]:            0  Cells from xbar plane[4]: 0
Cells to xbar plane[5]:            0  Cells from xbar plane[5]: 0
Cells to xbar plane[6]:            0  Cells from xbar plane[6]: 0
Cells to xbar plane[7]:            0  Cells from xbar plane[7]: 0
Cells to xbar plane[8]:            0  Cells from xbar plane[8]: 0
Total cells to backplane:      27847  Total cells from backplane:27863
Cells from QE48         :      27847  Cells to QE48:             27863
Undefined cells         :          0  CLP0 cells discard:        0
Errored OAM cells       :          0  CLP1 cells discard:        0
Invalid OAM cells       :          0
Unsupported OAM cells   :          0
Errored RM cells        :          0

Cells to dest slot[01]:            0  Cells to dest slot[02]:   0
Cells to dest slot[03]:            0  Cells to dest slot[04]:   0
Cells to dest slot[05]:            0  Cells to dest slot[06]:   0
Cells to dest slot[07]:        27847  Cells to dest slot[08]:   0
Cells to dest slot[11]:            0  Cells to dest slot[12]:   0
Cells to dest slot[13]:            0  Cells to dest slot[14]:   0
Cells to dest slot[15]:            0  Cells to dest slot[16]:   0
```

Example (AXSM-E)

Display card count on AXSM-E.

```
MGX8850.6.AXSME.a > dspcdcnt
>
All cell counters are cleared upon read!


           Ingress cells to xbar       Egress cells from xbar
```

```
           ---------------------      ---------------------
plane 1 :  0000000000000099546226     0000000000000088485236
plane 2 :  0000000000000082954903     0000000000000088485233
plane 3 :  0000000000000082954580     0000000000000088485236
plane 4 :  0000000000000000000000     0000000000000000000000
plane 5 :  0000000000000000000000     0000000000000000000000
plane 6 :  0000000000000000000000     0000000000000000000000
plane 7 :  0000000000000000000000     0000000000000000000000
plane 8 :  0000000000000000000000     0000000000000000000000


          Ingress cells to destination slot
----------------------------------------------------------------
slot 01 :  0000000000000000000000     slot 02: 0000000000000265455709
slot 03 :  0000000000000000000000     slot 04: 0000000000000000000000
slot 05 :  0000000000000000000000     slot 06: 0000000000000000000000
slot 07 :  0000000000000000000000     slot 08: 0000000000000000000000
slot 09 :  0000000000000000000000     slot 10: 0000000000000000000000
slot 11 :  0000000000000000000000     slot 12: 0000000000000000000000
slot 13 :  0000000000000000000000     slot 14: 0000000000000000000000


          Ingress cells to destination slot (VI Counts)
----------------------------------------------------------------
slot 01 :  0000000000000000000000     slot 02: 0000000000000265616448
slot 03 :  0000000000000000000000     slot 04: 0000000000000000000000
slot 05 :  0000000000000000000000     slot 06: 0000000000000000000000
slot 07 :  0000000000000000000000     slot 08: 0000000000000000000000
slot 09 :  0000000000000000000000     slot 10: 0000000000000000000000
slot 11 :  0000000000000000000000     slot 12: 0000000000000000000000
slot 13 :  0000000000000000000000     slot 14: 0000000000000000000000
```

Example (AXSM-XG)

```
M8950_DC.6.AXSMXG.a > dspcdcnt

All cell counters are cleared upon read!

           Ingress cells to xbar      Egress cells from xbar
           ---------------------      ---------------------
plane 01 : 0000000000000000000000     0000000000000000000000
plane 02 : 0000000000000000000000     0000000000000000000000
plane 03 : 0000000000000000000000     0000000000000000000000
plane 04 : 0000000000000000000000     0000000000000000000000
plane 05 : 0000000000000000000143     0000000000000000000143
plane 06 : 0000000000000000000171     0000000000000000000171
plane 07 : 0000000000000000000138     0000000000000000000138
plane 08 : 0000000000000000000000     0000000000000000000000
plane 09 : 0000000000000000000000     0000000000000000000000
plane 10 : 0000000000000000000000     0000000000000000000000
plane 11 : 0000000000000000000000     0000000000000000000000
plane 12 : 0000000000000000000000     0000000000000000000000
plane 13 : 0000000000000000000000     0000000000000000000000
plane 14 : 0000000000000000000000     0000000000000000000000
plane 15 : 0000000000000000000000     0000000000000000000000
plane 16 : 0000000000000000000000     0000000000000000000000

          Ingress cells to destination slot
----------------------------------------------------------------
slot 01 :  0000000000000000000000     slot 02: 0000000000000000000000
slot 03 :  0000000000000000000000     slot 04: 0000000000000000000000
slot 05 :  0000000000000000000000     slot 06: 0000000000000000000000
```

```
slot 07 :  0000000000000000000000      slot 08: 0000000000000000000000
slot 09 :  0000000000000000000000      slot 10: 0000000000000000000452
slot 11 :  0000000000000000000000      slot 12: 0000000000000000000000
slot 13 :  0000000000000000000000      slot 14: 0000000000000000000000
```

dspcdsct

Display Card SCT—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays the contents of a card-level Service Class Template (SCT) file. For information about SCTs, see the **cnfcdsct** description. To see the number of the current SCT for the card, use **dspcd**. The examples in this description illustrate the contents of SCT number 2 and SCT 3.

Note Currently, the system does not support certain parameters in the service class templates (SCTs), so you can specify them through **addcon**, **cnfcon**, or Cisco WAN Manager.
These parameters are (when applicable) PCR, SCR, and ICR.

Syntax (AXSM)

dspcdsct <bw | gen | cosb | vcThr | cosThr>

Syntax Description (AXSM)

bw **gen** **cosb** **vcThr** **cosThr**	• **bw:** bandwidth • **gen:** general VC • **cosb:** class of service buffer • **vcThr:** VC thresholds • **cosThr:** COSB thresholds

Syntax (AXSM-E, AXSM-XG)

dspcdsct < abr | gen | cosb | vcThr | cosThr | qeCosb | qeVcThr >

Syntax Description (AXSM-E, AXSM-XG)

abr	available bit rate parameters
gen	Policing and Connection Admission Control (CAC) parameters.
cosb	Class of Service Buffer parameters
vcThr	Virtual Channel Threshold parameters
cosThr	Class of Service Threshold parameters
qeCosb	Queueing Engine Class of Service Buffer parameters. The Queuing Engine in the Application-specific Integrated Circuit (ASIC) is used to program connections. This option displays the specific parameters programmed into it for a connection.
qeVcThr	Queueing Engine Virtual Channel Threshold parameters. The Queuing Engine in the Application-specific Integrated Circuit (ASIC) is used to program connections. This option displays the specific parameters programmed into it for a connection.

Related Commands

cnfcdsct, **dspsct**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example (SCT 2)

This example shows all parameters for SCT 2. Each display consists of one member of the SCT parameter group. The screen examples show the SCT ID that you have displayed (the command itself does not require the SCT ID because it is card-level).

Display the bandwidth parameters for SCT 2.

```
MGX8850.1.AXSM.a > dspcdsct bw
+-----------------------------------------------------------------------------+
Service Class Template [2] : Bw and Policing Parameters
+-----------------------------------------------------------------------------+
| SERV-TYPE |    PCR     |    SCR     |    MCR     |    MBS     |    CDVT    |    ICR     |
+-----------------------------------------------------------------------------+
| VSI-SIG    | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| CBR.1      | 00001000 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
| VBR-RT.1   | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-RT.2   | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-RT.3   | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-nRT.1 | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-nRT.2 | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-nRT.3 | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| UBR.1      | 00000010 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
| UBR.2      | 00000010 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
| ABR        | 00000010 | 00000000 | 01000000 | 00000001 | 00250000 | 00000000 |
| CBR.2      | 00001000 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
| CBR.3      | 00001000 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
+-----------------------------------------------------------------------------+
```

Display the policing and CAC parameters (parameter “gen”) for SCT 2. To confirm that the current card-level SCT is SCT 2, execute dspcd.

```
MGX8850.1.AXSM.a > dspcdsct gen
+---------------------------------------------------------------------------------------------------+
Service Class Template [2] : General Parameters
+---------------------------------------------------------------------------------------------------+
| SERV-TYPE | COSB_NUM | CAC_TYPE | UPC_ENB   | CLP-SELEC |     GCRA-1     |     GCRA-2     | CI-CNTRL |
+---------------------------------------------------------------------------------------------------+
| VSI-SIG    | 00000016 |    B-CAC |GCRA 1 & 2| 000000002 |       DISCARD |       DISCARD | DISABLED |
| CBR.1      | 00000003 |    B-CAC |GCRA1-ENB | 000000003 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.1   | 00000004 |    B-CAC |GCRA 1 & 2| 000000002 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.2   | 00000004 |    B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.3   | 00000004 |    B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       SET-CLP | DISABLED |
| VBR-nRT.1 | 00000005 |    B-CAC |GCRA 1 & 2| 000000002 |       DISCARD |       DISCARD | DISABLED |
| VBR-nRT.2 | 00000005 |    B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       DISCARD | DISABLED |
| VBR-nRT.3 | 00000005 |    B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       SET-CLP | DISABLED |
| UBR.1      | 00000006 |  LCN_CAC |GCRA1-ENB | 000000003 |       DISCARD |       DISCARD | DISABLED |
| UBR.2      | 00000006 |  LCN_CAC |GCRA1-ENB | 000000003 | DSCD/SET-CLP |       DISCARD | DISABLED |
| ABR        | 00000001 |    B-CAC |GCRA1-ENB | 000000003 |       DISCARD |       DISCARD | ENABLED  |
| CBR.2      | 00000003 |    B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       DISCARD | DISABLED |
| CBR.3      | 00000003 |    B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       SET-CLP | DISABLED |
+---------------------------------------------------------------------------------------------------+
```

Display the Class of Service Buffer parameters for SCT 2.

Min-Rate and Max-Rate do not apply in the current product.

Excess-Priority is a scheme for distributing excess bandwidth. The lowest number is the highest priority for a connection to receive excess bandwidth. If two or more connections have equal priority, the excess bandwidth is equally distributed between them.

Explicit Rate Stamping (ERS) applies to only ABR connections.

Cell loss ratio (CLR) is currently hard-coded, so do not attempt to modify it through the Cisco WAN Manager application or the CLI commands.

```
MGX8850.1.AXSM.a > dspcdsct cosb
+-------------------------------------------------------------------------------------+
|Service Class Template [02] : COSB Parameters
+-------------------------------------------------------------------------------------+
| COSB | MIN-RATE | MAX-RATE | MIN-PRIORITY | EXCESS-PRIORITY | ERS ENABLE |   CLR    |
+-------------------------------------------------------------------------------------+
| 0001 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0002 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0003 | 00000000 | 00000100 |          000 |             000 |    DISABLE | 10^-10 |
| 0004 | 00000000 | 00000100 |          000 |             001 |    DISABLE | 10^-08 |
| 0005 | 00000000 | 00000100 |          000 |             001 |    DISABLE | 10^-06 |
| 0006 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0007 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0008 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0009 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0010 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0011 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0012 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0013 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0014 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0015 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0016 | 00000000 | 00000100 |          000 |             000 |    DISABLE | 10^-06 |
+-------------------------------------------------------------------------------------+
```

Display VC thresholds for SCT 2.

The Scaling COSB value applies to congestion in a Class of Service Buffer: if a particular buffer becomes congested, this scaling factor determines the how quickly the rate at which cells enter the buffer is throttled back (until the buffer is no longer congested, at which time normal rates resume).

The Scaling Log-If is a scaling factor that applies to congestion on an entire port: when the whole port is congested, this factor determines the rate at which traffic is throttled back (until the port is no longer congested, at which time normal rates resume).

```
MGX8850.1.AXSM.a > dspcdsct vcThr
+------------------------------------------------------------------------------------------------------------+
Service Class Template [2] : VC Threshold Parameters
+------------------------------------------------------------------------------------------------------------+
| SERV-TYPE | VC THRESH | PACKET |  MAX_CELL  |  EFCI   | CLP_HI  |  EPD0   | CLP_LO  | SCALING | SCALING |
|           | TBL IDX   |  MODE  |   THRESH   |         |         |         |  EPD1   |  COSB   |  Log-If |
+------------------------------------------------------------------------------------------------------------+
| VSI-SIG   |    225    |  DSB   | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| CBR.1     |    226    |  DSB   | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| VBR-RT.1  |    227    |  DSB   | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-RT.2  |    228    |  DSB   | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-RT.3  |    229    |  DSB   | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.1 |    230    |  DSB   | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.2 |    231    |  DSB   | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.3 |    232    |  DSB   | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| UBR.1     |    233    |  DSB   | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| UBR.2     |    234    |  DSB   | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| ABR       |    235    |  DSB   | 0000050000 | 0200000 | 0800000 | 0600000 | 0800000 | 0000003 | 0000003 |
| CBR.2     |    236    |  DSB   | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| CBR.3     |    237    |  DSB   | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
+------------------------------------------------------------------------------------------------------------+
```

Display the Class of Service Thresholds for SCT 2.

```
MGX8850.1.AXSM.a > dspcdsct cosThr
+-----------------------------------------------------------------------------------------------+
Service Class Template [00002] : COSB Threshold Parameters
+-----------------------------------------------------------------------------------------------+
| COSB |COSB THRESH|  MAX_CELL  |  EFCI   | CLP_HI  |  EPD0   | CLP_LO  |   RED | RED PROB  |
|      | TBL IDX   |  THRESH    |         |         |         |  EPD1   | |  FACTOR   |
+-----------------------------------------------------------------------------------------------+
| 0001 |  0000114  |  1000000   | 0200000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0002 |  0000115  |  1000000   | 0200000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0003 |  0000116  |     5000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0004 |  0000117  |    10000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0005 |  0000118  |    50000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0006 |  0000119  |   100000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0007 |  0000120  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0008 |  0000121  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0009 |  0000122  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0010 |  0000123  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0011 |  0000124  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0012 |  0000125  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0013 |  0000126  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0014 |  0000127  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0015 |  0000128  |  1000000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0016 |  0000129  |    10000   | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
+-----------------------------------------------------------------------------------------------+
```

Example SCT 3

This example shows all parameters for SCT 3. Each display consists of one member of the SCT parameter group.

Display the bandwidth parameters for SCT 3.

```
MGX8850.9.AXSM.a > dspcdsct bw
+-------------------------------------------------------------------------------+
Service Class Template [3] : Bw and Policing Parameters
+-------------------------------------------------------------------------------+
| SERV-TYPE |   PCR    |   SCR    |   MCR    |   MBS    |   CDVT   |   ICR    |
+-------------------------------------------------------------------------------+
| VSI-SIG   | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| CBR.1     | 00001000 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
| VBR-RT.1  | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-RT.2  | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-RT.3  | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-nRT.1 | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-nRT.2 | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| VBR-nRT.3 | 00001000 | 01000000 | 00000000 | 00000050 | 00250000 | 00000000 |
| UBR.1     | 00000010 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
| UBR.2     | 00000010 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
| ABR       | 00000010 | 00000000 | 01000000 | 00000001 | 00250000 | 00000000 |
| CBR.2     | 00001000 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
| CBR.3     | 00001000 | 00000000 | 00000000 | 00000001 | 00250000 | 00000000 |
+-------------------------------------------------------------------------------+
```

This example shows SCT 0 for the AXSM-E.

```
MGX8850.6.AXSME.a > dspcdsct bw

Service Class Template [0] : Bw and Policing Parameters
+-----------------------------------------------------------+
| SERV-TYPE(DEC)  |   PCR    |   SCR    |   MCR    |   MBS    |
+-----------------------------------------------------------+
| VSI_DEFAULT(  1)|     1000 |     1000 |     1000 |     1000 |
```

```
|  VSI_SIGNAL(  2)|    1000 |     1000 |     1000 |     1000 |
|   ATMF_CBR1(256)|    1000 |     1000 |     1000 |     1000 |
| ATMF_VBRrt1(257)|    1000 |     1000 |     1000 |       50 |
| ATMF_VBRrt2(258)|    1000 |     1000 |     1000 |       50 |
| ATMF_VBRrt3(259)|    1000 |     1000 |     1000 |       50 |
|ATMF_VBRnrt1(260)|    1000 |     1000 |     1000 |       50 |
|ATMF_VBRnrt2(261)|    1000 |     1000 |     1000 |       50 |
|ATMF_VBRnrt3(262)|    1000 |     1000 |     1000 |       50 |
|   ATMF_UBR1(263)|      10 |       10 |     1000 |     1000 |
|   ATMF_UBR2(264)|      10 |       10 |     1000 |     1000 |
|    ATMF_ABR(265)|      10 |       10 |        0 |       50 |
|   ATMF_CBR2(266)|    1000 |     1000 |     1000 |     1000 |
|   ATMF_CBR3(267)|    1000 |     1000 |     1000 |     1000 |
|    TAG_COS0(512)|    1000 |     1000 |     1000 |     1000 |
|    TAG_COS1(513)|    1000 |     1000 |     1000 |     1000 |
|    TAG_COS2(514)|    1000 |     1000 |     1000 |     1000 |
|    TAG_COS3(515)|    1000 |     1000 |     1000 |     1000 |
|    TAG_COS4(516)|    1000 |     1000 |     1000 |     1000 |
|    TAG_COS5(517)|    1000 |     1000 |     1000 |     1000 |
|    TAG_COS6(518)|    1000 |     1000 |     1000 |     1000 |
|    TAG_COS7(519)|    1000 |     1000 |     1000 |     1000 |
| TAG_COS_ABR(528)|    1000 |     1000 |        0 |     1000 |
+-----------------------------------------------------------+
+-------------------------------------------------+
| SERV-TYPE(DEC)  |  CDVT   |   ICR    |   MFS    |
+-------------------------------------------------+
| VSI_DEFAULT(  1)|       2 |   10000 |     1000 |
|  VSI_SIGNAL(  2)|       2 |   10000 |     1000 |
|   ATMF_CBR1(256)|  250000 |   10000 |     1000 |
| ATMF_VBRrt1(257)|  250000 |   10000 |     1000 |
| ATMF_VBRrt2(258)|  250000 |   10000 |     1000 |
| ATMF_VBRrt3(259)|  250000 |   10000 |     1000 |
|ATMF_VBRnrt1(260)|  250000 |   10000 |     1000 |
|ATMF_VBRnrt2(261)|  250000 |   10000 |     1000 |
|ATMF_VBRnrt3(262)|  250000 |   10000 |     1000 |
|   ATMF_UBR1(263)|  250000 |   10000 |     1000 |
|   ATMF_UBR2(264)|  250000 |   10000 |     1000 |
|    ATMF_ABR(265)|  250000 |       0 |     1000 |
|   ATMF_CBR2(266)|  250000 |   10000 |     1000 |
|   ATMF_CBR3(267)|  250000 |   10000 |     1000 |
|    TAG_COS0(512)|       2 |   10000 |     1000 |
|    TAG_COS1(513)|       2 |   10000 |     1000 |
|    TAG_COS2(514)|       2 |   10000 |     1000 |
|    TAG_COS3(515)|       2 |   10000 |     1000 |
|    TAG_COS4(516)|       2 |   10000 |     1000 |
|    TAG_COS5(517)|       2 |   10000 |     1000 |
|    TAG_COS6(518)|       2 |   10000 |     1000 |
|    TAG_COS7(519)|       2 |   10000 |     1000 |
| TAG_COS_ABR(528)|       2 |   10000 |     1000 |
+-------------------------------------------------+
```

Display the general parameters for SCT 3.

```
MGX8850.9.AXSM.a > dspcdsct gen
+-----------------------------------------------------------------------------------------+
Service Class Template [3] : General Parameters
+-----------------------------------------------------------------------------------------+
| SERV-TYPE | COSB_NUM | CAC_TYPE | UPC_ENB  | CLP-SELEC |    GCRA-1     |    GCRA-2     | CI-CNTRL |
+-----------------------------------------------------------------------------------------+
| VSI-SIG   | 00000016 |    B-CAC |DISABLED  | 000000002 |       DISCARD |       DISCARD | DISABLED |
| CBR.1     | 00000003 |    B-CAC |DISABLED  | 000000003 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.1  | 00000004 |    B-CAC |DISABLED  | 000000002 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.2  | 00000004 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.3  | 00000004 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       SET-CLP | DISABLED |
| VBR-nRT.1 | 00000005 |    B-CAC |DISABLED  | 000000002 |       DISCARD |       DISCARD | DISABLED |
| VBR-nRT.2 | 00000005 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| VBR-nRT.3 | 00000005 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       SET-CLP | DISABLED |
| UBR.1     | 00000006 |  LCN_CAC |DISABLED  | 000000003 |       DISCARD |       DISCARD | DISABLED |
| UBR.2     | 00000006 |  LCN_CAC |DISABLED  | 000000003 | DSCD/SET-CLP  |       DISCARD | DISABLED |
| ABR       | 00000001 |    B-CAC |DISABLED  | 000000003 |       DISCARD |       DISCARD | ENABLED  |
| CBR.2     | 00000003 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       DISCARD | DISABLED |
| CBR.3     | 00000003 |    B-CAC |DISABLED  | 000000001 |       DISCARD |       SET-CLP | DISABLED |
+-----------------------------------------------------------------------------------------+
```

Display the Class of Service Buffer parameters for SCT 3.

Min-Rate and Max-Rate do not apply in the current product.

Excess-Priority is a scheme for distributing excess bandwidth. The lowest number is the highest priority for a connection to receive excess bandwidth. If two or more connections have equal priority, the excess bandwidth is equally distributed between them.

Explicit Rate Stamping (ERS) applies to only ABR connections.

Cell loss ratio (CLR) is currently hard-coded, so do not attempt to modify it through the Cisco WAN Manager application or the CLI commands.

```
MGX8850.9.AXSM.a > dspcdsct cosb
+----------------------------------------------------------------------------------+
|Service Class Template [03] : COSB Parameters
+----------------------------------------------------------------------------------+
| COSB | MIN-RATE | MAX-RATE | MIN-PRIORITY | EXCESS-PRIORITY | ERS ENABLE |  CLR   |
+----------------------------------------------------------------------------------+
| 0001 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0002 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0003 | 00000000 | 00000100 |          000 |             000 |    DISABLE | 10^-10 |
| 0004 | 00000000 | 00000100 |          000 |             001 |    DISABLE | 10^-08 |
| 0005 | 00000000 | 00000100 |          000 |             001 |    DISABLE | 10^-06 |
| 0006 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0007 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0008 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0009 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0010 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0011 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0012 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0013 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0014 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0015 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0016 | 00000000 | 00000100 |          000 |             000 |    DISABLE | 10^-06 |
+----------------------------------------------------------------------------------+
```

Display the bandwidth parameters for AXSM-E.

```
MGX8850.1.3.AXSME.a > dspcdsct bw
Service Class Template [0] : Bw and Policing Parameters

+-----------------------------------------------------------------------------+

| SERV-TYPE |    PCR     |    SCR     |    MCR     |    MBS     |    CDVT     |    ICR     |

+-----------------------------------------------------------------------------+

| 000000256 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000257 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000258 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000259 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000260 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000261 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000262 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000263 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000264 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000265 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000266 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
| 000000267 | 00002000 | 00001000 | 00000500 | 00001024 | 00250000 | 00000010 |
+-----------------------------------------------------------------------------+
```

dspcdstatcnf

Display Card Statistics Configuration—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays the TFTP bucket statistics settings that were set using **cnfcdstat**. TFTP bucket statistics are used to control the generation of files (that contain statistics) that are transferred to the Cisco WAN Manager (CWM) using the FTP protocol.

Syntax

dspcdstatcnf

Syntax Description

No parameters

Related Commands

cnfcdstat

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.10.AXSME.a > dspcdstatcnf
Bucket Interval       : fifteen
Collection Interval   : five
Stats Level           : 2
TFTP Statistics       : enable
```

dspchancnt

Display Channel Counters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Display the statistical counters for a connection (channel). See the **cnfdiag** command for a detailed description of the related diagnostics.

Note This command does not apply to OC-48 cards.

Syntax (AXSM)

dspchancnt <*ifNum*> <*vpi*> <*vci*> <*isPVC*>

Syntax Description (AXSM)

ifNum	The logical port number. The range for AXSM is 1–60.
vpi	The VPI in the range 1–4095.
vci	The VCI in the range 1–65535.
isPVC	A Boolean expression that identifies either an SVC or a SPVC. Type a 0 for an SVC or a 1 for an SPVC.

Syntax (AXSM-E, AXSM-XG)

dspchancnt <*ifNum*> <*vpi*> <*vci*> **-r** <*dsp interval*> **-max** <*max dsp time*>

Syntax Description (AXSM-E, AXSM-XG)

ifNum	The logical port number. The ranges are: • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI in one of the following ranges: • UNI port: 0—255 • NNI port:1–4095
vci	The VCI, in one of the following ranges: • VCC—0–65535 • VPC—0
-r	The interval at which to display the channel statistics, in the range from 1–60 seconds.
-max	The duration of time to display the channel statistics, in the range from 0–300 seconds. The default is 20 second.

Related Commands

clrchancnt, dspcdcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
M8950_DC.6.AXSMXG.a > dspchancnt 28 10 100
Ingress chan stat Egress chan stat
-------------------------------------- --------------------------------------
All non-compliant cells  : 0
CLP1 non-compliant       : 0
CLP0 non-compliant       : 0
CLP0 -> CLP1             : 0
Cells from port
(Before policing)        : 0        Cells to port            : 0
CLP0 from port           : 0        CLP0 to port             : 0
CLP1 from port           : 0        CLP1 to port             : 0
EOF from port            : N/A      EOF to port              : N/A
EFCI1 from port          : 0        EFCI1 to port            : 0
RM to port               : 0
Cells to network         : 0        Cells from network       : 0
CLP0 to network          : 0        CLP0 from network        : 0
CLP1 to network          : 0        CLP1 from network        : 0
EFCI1 to network         : 0        EFCI1 from network       : 0
CLP0 congestion discards : 0        CLP0 congestion discards : 0
CLP1 congestion discards : 0        CLP1 congestion discards : 0

M8950_DC.6.AXSMXG.a >
```

Example

Display channel counters on AXSM for 1 10 100.

```
MGX8850.11.AXSM.a > dspchancnt 1 10 100
                         Ingress         Egress
Instantaneous Qdepth:          0              0
Arrival CLP0 cells:            0         492305
Arrival CLP1 cells:            0              0
Dscd CLP0 cells:               0              -
Dscd CLP0+1 cells:             0              -
Noncompliant cells:            0              -
Arrival EFCI cells:            0              0
Arrival EOF cells:             0              0
```

Display channel counters on AXSM-E for 1 10 100.

```
MGX8850.6.AXSME.a > dspchancnt 1 10 100 -r 1 -max 1
           Ingress chan stat                           Egress chan stat
--------------------------------------      --------------------------------------
All non-compliant cells   :          0
CLP1 non-compliant        :          0
CLP0 non-compliant        :          0
CLP0 -> CLP1              :          0
Cells from port
(Before policing)         :          0      Cells to port             :          0
CLP0 from port            :          0      CLP0 to port              :          0
CLP1 from port            :          0      CLP1 to port              :          0
EOF from port             :          0      EOF to port               :          0
EFCI1 from port           :          0      EFCI1 to port             :          0
                                            RM to port                :          0
Cells to network          :          0      Cells from network        :          0
CLP0 to network           :          0      CLP0 from network         :          0
CLP1 to network           :          0      CLP1 from network         :          0
EFCI1 to network          :          0      EFCI1 from network        :          0
Cells discarded in qe     :          0      Cells discarded in qe     :          0
CLP0 discarded in qe      :          0      CLP0 discarded in qe      :          0
CLP1 discarded in qe      :          0      CLP1 discarded in qe      :          0
EOF discarded in qe       :          0
                                            EFCI1 discarded in qe     :          0
VC queue depth            :          0      VC queue depth            :          0
ACR (Valid for WFQ conns) :          1      ACR (Valid for WFQ conns) :          1
OAM from port             :          0      OAM to port               :          0
RM from port              :          0
RM to network             :          0      RM from network           :          0
OAM to network            :          0      OAM from network          :          0
OAM discarded in qe       :          0      OAM discarded in qe       :          0
EFCI1 discarded in qe     :          0
RM discarded in qe        :          0      RM discarded in qe        :          0


                             Type <Ctrl>C to quit
----------------------------------------------------------------------------------
           Ingress chan stat                           Egress chan stat
--------------------------------------      --------------------------------------
All non-compliant cells   :          0
CLP1 non-compliant        :          0
CLP0 non-compliant        :          0
CLP0 -> CLP1              :          0
Cells from port
(Before policing)         :        999      Cells to port             :       1000
CLP0 from port            :        999      CLP0 to port              :       1000
CLP1 from port            :          0      CLP1 to port              :          0
EOF from port             :          0      EOF to port               :          0
```

```
EFCI1 from port           :          0      EFCI1 to port             :          0
                                            RM to port                :          0
Cells to network          :       1000      Cells from network        :       1000
CLP0 to network           :       1000      CLP0 from network         :       1000
CLP1 to network           :          0      CLP1 from network         :          0
EFCI1 to network          :          0      EFCI1 from network        :          0
Cells discarded in qe     :          0      Cells discarded in qe     :          0
CLP0 discarded in qe      :          0      CLP0 discarded in qe      :          0
CLP1 discarded in qe      :          0      CLP1 discarded in qe      :          0
EOF discarded in qe       :          0
                                            EFCI1 discarded in qe     :          0
VC queue depth            :          0      VC queue depth            :          0
ACR (Valid for WFQ conns) :          1      ACR (Valid for WFQ conns) :          1
OAM from port             :          0      OAM to port               :          0
RM from port              :          0
RM to network             :          0      RM from network           :          0
OAM to network            :          0      OAM from network          :          0
OAM discarded in qe       :          0      OAM discarded in qe       :          0
EFCI1 discarded in qe     :          0
RM discarded in qe        :          0      RM discarded in qe        :          0
```

Display channel counters on AXSM-XG.

```
MGX8850.1.AXSMXG.a > dspchancnt 2 1 100
           Ingress chan stat                          Egress chan stat
--------------------------------------      --------------------------------------
All non-compliant cells   : 0
CLP1 non-compliant        : 0
CLP0 non-compliant        : 0
CLP0 -> CLP1              : 0
Cells from port
(Before policing)         : 23                   Cells to port      : 23
CLP0 from port            : 23                   CLP0 to port       : 23
CLP1 from port            : 0                    CLP1 to port       : 0
EOF from port             : 0                    EOF to port        : 0
EFCI1 from port           : 0                    EFCI1 to port      : 0
                                                 RM to port         : 0
Cells to network          : 0                    Cells from network : 23
CLP0 to network           : 0                    CLP0 from network  : 23
CLP1 to network           : 0                    CLP1 from network  : 0
EFCI1 to network          : 0                    EFCI1 from network : 0
CLP0 congestion discards  : 0                 CLP0 congestion discards : 0
CLP1 congestion discards  : 0                     CLP1 congestion discards : 0
```

dspchandbgcnf

Display Channelized Debugging Configuration—AXSM

Display all channels on the current AXSM that have the channelized debugging feature enabled.

Note To enable the channelized debugging feature, enter the **cnfchandbg** command.

Syntax

dspchandbgcnf <*dbgLevel*>

Syntax Description

dbgLevel	Level of statistics debugging to be displayed: • 1 = coreStats • 2 = detailedStats

Related Commands

cnfchandbg, clrchandbg, **dspchandbgcnt**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Display all channels on current AXSM that have level 1 (core) channelized debugging enabled.

```
M8850_NY.1.AXSM.a > dspchandbgcnf 1
port     Vpi       Vci
 11        0         5
```

dspchandbgcnt

Display Channelized Debugging Counters—AXSM

Display all channelized debugging counters for the specified channel on the current AXSM.

Note To enable the channelized debugging feature, enter the **cnfchandbg** command.

Syntax

dspchandbgcnt <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 60.
vpi	Virtual path identifier in the range 0–255 (UNI) or 0–4095 (NNI or VNNI).
vci	Virtual connection identifier (VCI): • For a VCC on a UNI, the range is 1–4095. On an NNI or VNNI, the VCI range is 1–65535. For MPLS, the recommended minimum VCI is 35. • For a VPC, the *vci* is 0.

Related Commands

cnfportdbg, **clrportdbgcnt**, **dspportdbgcnf**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Display the channelized debugging counters for logical interface (or port) 11, VPI 0, VCI 0 on the current AXSM.

```
M8850_NY.1.AXSM.a > dspchandbgcnt 11 0 0
                                                  Ingress         Egress
Instantaneous Qdepth:                                0               0
Arr CLP0 EFCI0 cells:                               97              97
Arr CLP0 EFCI1 cells:                                0               0
Arr CLP1 EFCI0 cells:                                0               0
Arr CLP1 EFCI1 cells:                                0               0

Dep CLP0 EFCI0 cells:                               97              97
Dep CLP0 EFCI1 cells:                                0               0
Dep CLP1 EFCI0 cells:                                0               0
Dep CLP1 EFCI1 cells:                                0               0

Detailed stats not enabled

M8850_NY.1.AXSM.a >
```

dspchanloop

Display Channel Loopbacks—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Show channel (connection) loopbacks on a logical port.

Syntax

dspchanloop <*ifNumber*>

Syntax Description

ifNumber	The logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126

Related Commands

addchanloop, **delchanloop**

Attributes

Log: no	State: active, standby	Privilege: SERVICE_GP

Example

Display any channel loopbacks on logical port 4. The display shows one connection with a loopback in the ingress direction.

```
MGX8850.1.AXSM.a > dspchanloop 4
Port      Type       lVPI       lVCI       rVPI       rVCI
  4     igrLpbk       1         50          0          35
```

dspchantests

Display Channel Tests—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **tstdelay** or **tstconseg** commands test the integrity of the path of a connection in the ingress and egress directions, respectively. After you successfully start a test through **tstdelay** or **tstconseg**, the returned message directs you to use **dspchantests** or **dspcon** to see the results. The same test results presented by **dspchantests** appears in the **dspcon** display, but **dspchantests** shows only the test results.

Syntax

dspchantests <*ifNum*> <*vpi*> <*vci*> [-**num** <*count*>]

Syntax Description

ifNum	The logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI range for the SVC or SPVC is 1–255.
vci	The VCI range for a VCC SPVC is 1–65535. For a VPC, the only VCI value for an SPVC is 0.
-num	(Optional) A keyword that indicates an aggregate connection count follows.

Related Commands

tstdelay, **tstconseg**, **dspcon**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Run **tstdelay** on connection 1 10 100 then display the results.

Step 1 Execute **tstdelay**.

```
MGX8850.1.AXSM.a > tstdelay 1 10 100
Test started; Use dspcon/dspchantests to see test results
```

Step 2 Check the results.

```
MGX8850.1.AXSM.a > dspchantests 1 10 100
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0010.00100:    OAM Lpbk     ingress     Success          40000
```

Run **tstconseg** for 1 10 100 then display the results.

Step 1 Run the test for 1 10 100.

```
MGX8850.1.AXSM.a > tstconseg 1 10 100
Test started; Use dspcon/dspchantests to see test results
```

Step 2 Check the results.

```
MGX8850.1.AXSM.a > dspchantests 1 10 100
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0010.00100:    OAM Lpbk     egress      TimeOut              0
```

dspcon

Display Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Display information about an SPVC. The contents of the display on the AXSM and the PXM45 differ slightly. On both cards, the **dspcon** output appears in sections to make the information easier to sort.

Most of the information in the **dspcon** output comes from **addcon** execution. See the **addcon** description for more information. Also, executing **cnfpnni-intf** can affect the **dspcon** output.

Display Connection on the AXSM

On the AXSM, **dspcon** shows the following connection identifiers:

- NSAP address, logical port, VPI/VCI, status, and ownership of local and remote ends of the connection. The display shows whether a particular endpoint is the master or slave.

The provisioning parameters in the display show:

- Connection type of VPC or VCC.
- Service type (for example, ABR).
- A number indicating the controller. For example, 2 refers to PNNI. The **addcontroller** command specifies the controller.
- The administrative state is either up or down. This state results from **addcon** or **dncon/upcon**. Note that, after you down a connection with at the connection master endpoint, the **dspcon** command shows the connection as "down" when you execute it at the master endpoint and "failed" when you execute it at the slave endpoint. (See also **dncon** description).
- The operational state is either OK or failed. The operational state can apply to a connection regardless of the administrative state.

The traffic management parameters consist of:

- Local and remote UPC parameters of PCR, MBS, CTD, CDVT, and so on. A –1 in a field means that the parameter was not specified. The characters "N/A" indicate that the parameter does not apply to the service type.

These other fields also pertain to connection integrity:

- OAM connectivity check enable or disable.
- Loopback test enable/disable and loopback type.
- Round trip delay in microseconds. This field is non-zero only if you previously executed **tstdelay**.

The **dspcon** command requires a unique connection identifier. If you do not have the information to identify a connection, execute **dspcons**. On the AXSM, **dspcons** identifies all the connections on the AXSM. On the PXM45, **dspcons** identifies all the connections on the node. (See **dspcons** description).

Display Connection on the AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The display output on the AXSM-E and AXSM-XG also displays RDI (Remote Defect Indication) information at the ATM Layer through the OAM mechanism in Ingress and Egress directions.

Syntax

dspcon <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	VPI number. At the UNI, the range is 0–255. At the NNI, the range is 0–4095.
vci	VCI number. For a VCC, the range is 1–65535. For a VPC, the VCI is 0.

Related Commands

addcon, **dspcons**, **cnfcon**

Attributes

Log: no	State: active	Privilege: GROUP1

Example

Display connection 1 102 102 on the current AXSM.

```
MGX8850.3.AXSM.a > dspcon 1 102 102
--------------------------------------------------------------------------
Local   :                NSAP  Address                     vpi       vci
(M)       47009181000001000001A531C2A00000103180100        102       102
Remote  :                NSAP  Address                     vpi       vci
(S)       470091810000020036B5E30CD00000101180200         102       102
--------------------------------------------------------------------------
Conn. Type    :        VCC                      Admn Status  :    ADMN-UP
Service Type  :       cbr1                      Oper Status  :       FAIL
Controller    :          2                      Record #     :          0
SlavePersist  :        YES                      Cast-type    :        N/A
--------------------------------------------------------------------------
Local PCR     :         50                      Remote PCR   :         50
Local SCR     :        N/A                      Remote SCR   :        N/A
Local CDV     :         -1                      Remote CDV   :         -1
Local CTD     :         -1                      Remote CTD   :         -1
Local MBS     :        N/A                      Remote MBS   :        N/A
Max Cost      :         -1                      Frame discard:   DISABLED
Local CDVT    :     250000                      OAM segment  :    ENABLED
Local PctUtil :        100                   Rmt PctUtil  :        100
Priority      :          8
Pref Rte Id   :        N/A                     Directed route:        N/A
--------------------------------------------------------------------------
OAM CC Config :   DISABLED                      Statistics   :   DISABLED

--------------------------------------------------------------------------
Loopback Type : No  Lpbk | Dir: N/A     | Status: No Lpbk | RTD:      0us
--------------------------------------------------------------------------

--------------------------------------------------------------------------
Port side Tx  :        AIS                      Swth side Tx :     normal
Port side Rx  :        AIS                      Swth side Rx :        AIS
--------------------------------------------------------------------------
I-AIS/RDI   E-AIS/RDI   CONDITIONED   CCFAIL   IfFail   Mismatch  LMI-ABIT
  YES         YES           YES         NO       NO        NO         NO
```

```
--------------------------------------------------------------------------

MGX8850.3.AXSM.a >
```

Display output for AXSM-E, port 1, VPI 10, VCI 100.

```
MGX8850.6.AXSME.a > dspcon 1 10 100
--------------------------------------------------------------------------
Local    :                NSAP  Address                      vpi       vci
(S)       47009181000000002A231F3C4A00000106180100           10       100
Remote  :                 NSAP  Address                      vpi       vci
(M)       47009181000000002A231F3C4A00000106180200           10       100
--------------------------------------------------------------------------
Conn. Type    :        VCC                      Admn Status  :    ADMN-UP
Service Type  :       cbr1                      Oper Status  :         OK
Controller    :          2                      Record #     :          0
--------------------------------------------------------------------------
Local PCR     :       1000                      Remote PCR   :       1000
Local SCR     :        N/A                      Remote SCR   :        N/A
Local CDV     :        N/A                      Remote CDV   :        N/A
Local CTD     :        N/A                      Remote CTD   :        N/A
Local MBS     :        N/A                      Remote MBS   :        N/A
Max Cost      :        N/A                      Frame discard:          N
Local CDVT    :     250000                      OAM segment  :    ENABLED
--------------------------------------------------------------------------
OAM CC Config :   DISABLED                      Statistics   :   DISABLED
--------------------------------------------------------------------------
Loopback Type : No  Lpbk | Dir: N/A      | Status: No Lpbk | RTD:      0us
--------------------------------------------------------------------------


--------------------------------------------------------------------------
Port side Tx  :     normal                      Swth side Tx :        AIS
Port side Rx  :     normal                      Swth side Rx :     normal
--------------------------------------------------------------------------
Ing-E2E-AIS   ING-SEG-AIS   Ing-E2E-RDI   Ing-SEG-RDI
   NO            NO            NO            NO
--------------------------------------------------------------------------
Egr-E2E-AIS   Egr-SEG-AIS   Egr-E2E-RDI   Egr-SEG-RDI
  YES            NO            NO             NO
--------------------------------------------------------------------------
Ing-E2E-CCFAIL   Ing-SEG-CCFAIL   Egr-E2E-CCFail   Egr-SEG-CCFail
  ---               ---              ---              ---
--------------------------------------------------------------------------
CONDITIONED  IfFail   Mismatch   LMI-ABIT
   NO         YES         NO         NO
--------------------------------------------------------------------------
```

dspconalarms

Display Connection Alarms—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspconalarms** command to display connection alarms. The command lists alarms by port and shows instances by the severities of critical, major, and minor alarms. The display also shows which types of failures constitute each of these severities.

Syntax

dspconalarms

Syntax Description

No parameters

Related Commands

dspconalmcnts

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display connection alarms. This card has three logical interfaces but no connection alarms.

```
MGX8850.1.AXSM.a > dspconalarms
****************************************************************
******* CONNECTIONS IN ALARM PER INTERFACE (BY SEVERITY) *******
****************************************************************
IF#      IfState    #Critical    #Major     #Minor
--       -------    ---------    ------     ------
01       ACTV          00000     00000      00000
02       ACTV          00000     00000      00000
03       ACTV          00000     00000      00000
****************************************************************
**************  PRESENT ALARM SEVERITY CONFIGURATION  **********
****************************************************************

CRITICAL:  Mismatch
MAJOR   :  Condn  CCFail
MINOR   :  IngAlm  EgrAlm  IfFail  Abit

MGX8850.1.AXSM.a >
```

dspconalmcnts

Display Connection Alarm Counts—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dspconalmcnts** command lists errored connections on the logical interfaces on the card. This command lists by alarm *cause*. The causes are:

- Conditioning
- Ingress alarm
- Egress alarm
- Connection conditioning failure
- Mismatch
- A-bit

Syntax

dspconalmcnts

Syntax Description

No parameters

Related Commands

dspconalms

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the connection alarms by alarm cause.

```
MGX8850.1.AXSM.a > dspconalmcnts
***************************************************************************
************ CONNECTIONS IN ALARM PER INTERFACE (BY ALM CAUSE)************
***************************************************************************
IF#  IfState  #Condn  #IngAlm  #EgrAlm  #CCFail  #ifFail  #mismatch  #Abit
--   -------  ------  -------  -------  -------  -------  ---------  -----
01   ACTV     00000   00000    00000    00000    00000    00000      00000
02   ACTV     00000   00000    00000    00000    00000    00000      00000
03   ACTV     00000   00000    00000    00000    00000    00000      00000
********************  SUMMARY ALARM COUNT FOR THE CARD *******************
#Condn    #IngAlm    #EgrAlm    #CCFail    #ifFail   #mismatch   #abit
000000     000000     000000     000000     000000    000000    000000
```

dspconalms

Display Connection Alarms—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspconalms** command to display connection alarms. The command lists alarms by port and shows instances by the severities of critical, major, and minor alarms. The display also shows which types of failures constitute each of these severities.

Syntax

dspconalms

Syntax Description

No parameters

Related Commands

dspconalmcnts

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display connection alarms. This card has three logical interfaces but no connection alarms.

```
MGX8850.1.AXSM.a > dspconalms
****************************************************************
******* CONNECTIONS IN ALARM PER INTERFACE (BY SEVERITY) *******
****************************************************************
IF#      IfState    #Critical    #Major     #Minor
--       -------    ---------    ------     ------
01       ACTV          00000     00000      00000
02       ACTV          00000     00000      00000
03       ACTV          00000     00000      00000
****************************************************************
**************  PRESENT ALARM SEVERITY CONFIGURATION  **********
****************************************************************

CRITICAL:  Mismatch
MAJOR   :  Condn  CCFail
MINOR   :  IngAlm  EgrAlm  IfFail  Abit

MGX8850.1.AXSM.a >
```

dspconhwcnf

Display Connection Hardware Configuration—AXSM-E, AXSM-32-T1E1-E, AXSM-32-E

This command displays the actual data that is programmed into the AXSM-E hardware for the specified port (*ifNum*) and connection (*vpi/vci*).

These values, such as cell rates, policing limits, and congestion codes, are the actual values programmed into the ATLAS, QE, and SABRE Application-Specific Integrated Circuits (ASICs). These values get translated into specific values with fixed ranges that are used in commands such as **dspcon** and **cnfabr**.

This command is for gathering statistical data and for debugging connections. You can use this command to see if the correct values are getting programmed into the ASICs for specific connections. This command eliminates the need to use shellCon commands for debugging connections.

Table 5-18 gives a description of the programmed data fields in the **dspconhwcnf** command output as follows:

- Queuing Engine (QE) programmed data
- ATLAS programmed data
- ATLAS OAM (Operation, Administration, and Maintenance) programmed data.
- SABRE programmed data

Table 5-18 dspconhwcnf Command Output Display Field Descriptions

Display Field	Description
QE Programmed Data	
Scaling Class	The specific template class being used (0–3).
ABR Segment End Point	0 = Disabled/Absent 1 = Enabled/Present
Path Connection	0 = Disabled/Absent 1 = Enabled/Present
End-to-End	0 = Disabled/Absent 1 = Enabled/Present
VC Merge	0 = Disabled/Absent 1 = Enabled/Present
Discard Select	0 = Disabled/Absent 1 = Enabled/Present
Congestion Code	The congestion update code 0 = Do not update EFCI or CI bit 1 = Set CI bit for departing Forward RM cell if congested 2 = Set EFCI bit for departing User cell if congested 3 = Clear EFCI bit for departing user cell
Explicit Rate Stamping	0 = Disabled/Absent 1 = Enabled/Present
Departure Cell Discard	0 = Disabled/Absent 1 = Enabled/Present

Table 5-18 dspconhwcnf Command Output Display Field Descriptions (continued)

Display Field	Description (continued)
ATLAS Programmed Data	
Guaranteed Frame Rate	0 = Disabled/Absent 1 = Enabled/Present
Connection Policing	0 = Disabled/Absent 1 = Enabled/Present
Action2	The second action taken on the non-conforming cell: 0 = Set the Police status but take no action 1 = Reduce priority of high priority cells (Tag CLP = 0 cells) 2 = Reduce priority of high priority cells and discard low priority cells 3 = Discard all non-conforming cells
Action1	The first action taken on non-conforming cell: 0 = Set the policing status, but take no action 1 = Reduce priority of high priority cells (Tag CLP = 0 cells) 2 = Reduce priority of high priority cells and discard low priority cells 3 = Discard all non-conforming cells
Incrment2	The configured rate for policing requirements
Limit2	The configured rate for policing requirements
Incrment1	The configured rate for policing requirements
Limit1	The configured rate for policing requirements
Cocup	0 = Disabled/Absent 1 = Enabled/Present
ATLAS OAM Programmed Data	
F4F5AIS	0 = Disabled/Absent 1 = Enabled/Present
Tx CC End-to-end	0 = Disabled/Absent 1 = Enabled/Present
Tx CC Segment	0 = Disabled/Absent 1 = Enabled/Present
Segment End Point	0 = Disabled/Absent 1 = Enabled/Present
End-to-end End Point	0 = Disabled/Absent 1 = Enabled/Present
Class of Service Enable	0 = Disabled/Absent 1 = Enabled/Present
Vpc Pointer	0 = Absent Any other value is the value of the VPC pointer.

Table 5-18 dspconhwcnf Command Output Display Field Descriptions (continued)

Display Field	Description (continued)
Loopback to MultiProcessor	0 = Disabled/Absent 1 = Enabled/Present
Drop Loopback	0 = Disabled/Absent 1 = Enabled/Present
SABRE Data	
Weighted Fair Queuing	0 = Disabled/Absent 1 = Enabled/Present
VSVD Enabled	0 = Disabled/Absent 1 = Enabled/Present
NRM	Number of Resource Management Cells[1]: The ABR service parameter that controls the maximum number of cells that a source may send for each forward RM cell. Range: 0–7
TRM	Time of Resource Management Cells[1]: The ABR service parameter that provides the upper limit on the time between forward RM cells. Range: 0–7
CDF	The Cutoff Decrease Factor. The ABR service parameter that controls the decrease in the Allowed Cell Rate (ACR) associated with the missing RM cell count, which limits the number of forward RM cells that may be sent in the absence of received-backward RM cells. Range: 0–7
RIF	Rate Increase Factor: The ABR service parameter that controls the amount by which the cell transmission rate may increase upon receipt of an RM cell. Range: 0–15
RDF	Rate Decrease Factor: The ABR service parameter that controls the decrease in the cell transmission rate. Range: 0–15
ADTF	Allowed Cell Rate (ACR) Decrease Time Factor: The time allowed between sending RM cells before the rate is decreased to the Initial Cell Rate (ICR). Range: 1–1023 milliseconds.
Peak Cell Rate	The maximum cell rate.
Minimum Cell Rate	The minimum cell rate.

1.Resource Management (RM) cells provide information about the state of the net work such as bandwidth availability, state of congestion, and impending congestion.

Syntax

dspconhwcnf <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI of the connection. The range is 0–4095.
vci	The VCI of the connection. The range is 0–65635.

Related Commands

None.

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.4.AXSME.a > dspconhwcnf 11 13 133


Connection data programmed in hw for ifNum: 11 Vpi: 13 Vci: 133
                                      INGRESS                 EGRESS
-----------------------------------------------------------------------
QE Data
-------
Scaling Class                 :          3                      3
ABR Segment End Point         :          1                      1
Path Connection               :          0                      0
End-to-End                    :          0                      0
VC Merge                      :          0                      0
Discard Select                :          0                      0
Congestion Code               :          3                      3
Explicit Rate Stamping        :          0                      0
Departure Cell Discard        :          0                      0


Policing Data
-------------
Guaranteed Frame Rate         :          0
Connection Policing           :          1
Action2                       :          0
Action1                       :          3
Incrment2                     :      16383
Limit2                        :          0
Incrment1                     :       3736
Limit1                        :      12026
Cocup                         :          1


OAM Data
--------
F4F5AIS                       :          0
Tx CC End-to-end              :          0                      0
```

```
Tx CC Segment                :        0            0
Segment End Point            :        1            1
End-to-end End Point         :        0            0
Class of Service Enable      :        1            1
Vpc Pointer                  :        0            0
Loopback to MultiProcessor   :        1            1
Drop Loopback                :        1            1


SABRE Data
----------
Weighted Fair Queuing        :       NO           NO
VSVD Enabled                 :      YES          YES
NRM                          :        4            4
TRM                          :        0            0
CDF                          :        2            2
RIF                          :        9            9
RDF                          :        9            9
ADTF                         :        3            3
Peak Cell Rate               :   299520       299520
Minimum Cell Rate            :       50           50
```

dspconload

Display Connection Load—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dspconload** command displays the number of ingress and egress cells per second on a connection (*ifNum/vpi/vci*). With the statistics provided by **dspconload**, you can determine whether the current load on the connection suggests a modification to the connection or possible troubleshooting.

Syntax

dspconload <*ifNum*> <*vpi*> <*vci*> [*intvl*]

Syntax Description

ifNum	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI of the connection. The range is 0–4095.
vci	The VCI of the connection. The range is 0–65635.
intvl	The optional time interval in seconds for which the cell rate will be displayed. The range is 1–5. The default is 1. For example, if 5 seconds is specified, the average cell rate for a 5 second interval is displayed.

Related Commands

dspcons, **dspcon, dspload**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example (AXSM)

Display the load on the connection with a VPI and VCI of 101 and 101, respectively, on logical port 3. In this case, no traffic currently exists on the connection.

```
MGX8850.10.AXSM.a > dspconload 3 101 101
Getting the stats. Please wait ...
                        Ingress            Egress
Cell rate (cps)       : 0                  0
```

Example (AXSM-E)

Display the load on the connection with a VPI and VCI of 10 and 100, respectively, on logical port 1.

```
MGX8850.6.AXSME.a > dspconload 1 10 100
           Ingress                                          Egress
--------------------------------------      --------------------------------------
All non-compliant cells   :          0
CLP1 non-compliant        :          0
CLP0 non-compliant        :          0
CLP0 -> CLP1              :          0
Cells from port
(Before policing)         :        999      Cells to port             :        999
CLP0 from port            :        999      CLP0 to port              :        999
CLP1 from port            :          0      CLP1 to port              :          0
EOF from port             :          0      EOF to port               :          0
EFCI1 from port           :          0      EFCI1 to port             :          0
                                            RM to port                :          0
Cells to network          :        999      Cells from network        :        999
CLP0 to network           :        999      CLP0 from network         :        999
CLP1 to network           :          0      CLP1 from network         :          0
EFCI1 to network          :          0      EFCI1 from network        :          0
Cells discarded in qe     :          0      Cells discarded in qe     :          0
CLP0 discarded in qe      :          0      CLP0 discarded in qe      :          0
CLP1 discarded in qe      :          0      CLP1 discarded in qe      :          0
EOF discarded in qe       :          0
                                            EFCI1 discarded in qe     :          0
VC queue depth            :          0      VC queue depth            :          0
ACR (Valid for WFQ conns) :          1      ACR (Valid for WFQ conns) :          1
OAM from port             :          0      OAM to port               :          0
RM from port              :          0
RM to network             :          0      RM from network           :          0
OAM to network            :          0      OAM from network          :          0
OAM discarded in qe       :          0      OAM discarded in qe       :          0
EFCI1 discarded in qe     :          0
RM discarded in qe        :          0      RM discarded in qe        :
```

dspcons

Display Connections—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The default entry of the **dspcons** command requires no parameters and displays general information for all connections. Because of the very large number of possible connections, optional filters are available to let you narrow the scope of the output. See Syntax Description for each card type.

The **dspcons** command runs on a PXM or any model of broadband or narrowband service module. The optional parameters and the output are different on these card types. See Syntax Description for card-specific parameters.

Note The **dspcons** command on the PXM1E shows provisioned connections on the narrowband service modules and the UNI/NNI back card—from the VSI master viewpoint. To display connections on a narrowband VSI slave, you **cc** to the card and use the **dspcon** or **dspcons** command. To see connections on the UNI/NNI card as a VSI slave, two commands are available especially for this purpose: **dspchan** and **dspchans**. Refer to their descriptions.

The dspcons Output on AXSM

On an AXSM, the columns at the head of the information fields are:

record	A number for the connection with internal application only. It resides in the database on the AXSM and is not affected by user input. The system creates this number when you create the connection. The Cisco WAN Manager application uses this number.
Identifier	Identifies the connection in the format *port vpi vci*.
Type	Shows whether the connection is a VCC or a VPC.
SrvcType	The service type—VBR, and so on. (See **addcon** description).
M/S	Indicates whether the endpoint specified by *Identifier* is the master or slave.
Upld	The hexadecimal Upload number is an encoded timestamp the Cisco WAN Manager application uses to determine when a connection was created or modified. In the CLI context, this field has little meaning.
Adm	The administrative state of the connection. If the connection is down, it may have resulted from the **dncon** command.
Alarm	Shows the alarm status of the connection. **Note** The alarm status for standby cards is reported as N/A because the alarm status of the standby card may not be the same as the active card.

Syntax

dspcons [**-conn** <*conn id*>] [**-filt** <*filter options*>] [**-if** <*intf no*>] [**-vpi** <*vpi filter*>] [**-vci** <*vci filter*>]

Syntax Description

-conn	Identify a connection to begin the display. The connection ID has the following format: *ifNum.vpi.vci* The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126 • VPI: 0–4095 • VCI: 1–65535
-filt	An integer after the **filt** keyword identifies a type of filter, as follows: 1 ingr—for errors in the ingress direction 2 egr—for errors in the egress direction 3 condn—for connections where the switch has conditioned the connection 4 iffail—for connection on a failed logical interface 5 ccfail 6 mis
-if	Identify a logical interface for connection display. The output shows all connections on the specified interface. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
-**vpi**	The VPI of all the connections that you would like to display.
-**vci**	The VCI of all the connections that you would like to display.

Related Commands

dspcon, **addcon**, **cnfcon**, **delcon**, **dncon**, **upcon, dsppncon, dsppncons**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example (AXSM)

Display all the connections on the current AXSM-E.

```
MGX8850.5.AXSME.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld     Admn   Alarm
------    ----------   ----   --------   ---    ----     ----   -----
    0   02 0010 00100   VCC       cbr1   M   03d25966     UP      none
    1   02 0011 00000   VPC       cbr2   M   03d25982     UP      none
    2   02 0012 00100   VCC       cbr3   M   03d2598d     UP      none
    3   02 0013 00100   VCC     vbr1rt   M   03d2599a     UP      none
    4   02 0014 00100   VCC     vbr2rt   M   03d259a1     UP      none
```

```
     5  02 0015 00000   VPC      vbr3rt   M   03d259ae     UP      none
     6  02 0016 00100   VCC     vbr1nrt   M   03d259bd     UP      none
     7  02 0017 00000   VPC     vbr2nrt   M   03d259c4     UP      none
     8  02 0018 00000   VPC     vbr3nrt   M   03d259ce     UP      none
     9  02 0019 00000   VPC        ubr1   M   03d259d5     UP      none
    10  02 0020 00100   VCC        ubr2   M   03d259dd     UP      none
    11  02 0021 00000   VPC      abrstd   M   03d259e8     UP      none
    12  02 0022 00100   VCC      abrstd   M   03d259f2     UP      none
```

Display all connections on logical interface 2 starting with VPI.VCI 20.100.

```
MGX8850.5.AXSME.a > dspcons -conn 2.20.100
record    Identifier   Type   SrvcType   M/S    Upld    Admn   Alarm
------    ----------   ----   --------   ---    ----    ----   -----
    10  02 0020 00100   VCC        ubr2   M   03d259dd     UP      none
    11  02 0021 00000   VPC      abrstd   M   03d259e8     UP      none
    12  02 0022 00100   VCC      abrstd   M   03d259f2     UP      none
```

Display all connections on logical interface 2.

```
MGX8850.5.AXSME.a > dspcons -if 2
record    Identifier   Type   SrvcType   M/S    Upld    Admn   Alarm
------    ----------   ----   --------   ---    ----    ----   -----
     0  02 0010 00100   VCC        cbr1   M   03d25966     UP      none
     1  02 0011 00000   VPC        cbr2   M   03d25982     UP      none
     2  02 0012 00100   VCC        cbr3   M   03d2598d     UP      none
     3  02 0013 00100   VCC      vbr1rt   M   03d2599a     UP      none
     4  02 0014 00100   VCC      vbr2rt   M   03d259a1     UP      none
     5  02 0015 00000   VPC      vbr3rt   M   03d259ae     UP      none
     6  02 0016 00100   VCC     vbr1nrt   M   03d259bd     UP      none
     7  02 0017 00000   VPC     vbr2nrt   M   03d259c4     UP      none
     8  02 0018 00000   VPC     vbr3nrt   M   03d259ce     UP      none
     9  02 0019 00000   VPC        ubr1   M   03d259d5     UP      none
    10  02 0020 00100   VCC        ubr2   M   03d259dd     UP      none
    11  02 0021 00000   VPC      abrstd   M   03d259e8     UP      none
    12  02 0022 00100   VCC      abrstd   M   03d259f2     UP      none
```

Display all connections on the current AXSM. In this example, only one connection exists. Master and slave endpoints are shown.

```
MGX8850.6.AXSM.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld    Admn   Alarm
------    ----------   ----   --------   ---    ----    ----   -----
     0  01.0010.00100   VCC        cbr1   S   010c7953    UP      none
     1  04.0020.00100   VCC        cbr1   M   010c7964    UP      none
```

Example (AXSM-E)

Display all connections on the current AXSM-E.

```
MGX8850.6.AXSME.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld    Admn   Alarm
------    ----------   ----   --------   ---    ----    ----   -----
     0  01 0010 00100   VCC        cbr1   S   01b945d2     UP   IF fail
     1  02 0010 00100   VCC        cbr1   M   01b945f2     UP   E-AisRdi
```

On the AXSM-E in slot 5, display all connections with a VCI of 100.

```
MGX8850.5.AXSME.a > dspcons -vci 100
record    Identifier   Type   SrvcType   M/S    Upld    Admn   Alarm
------    ----------   ----   --------   ---    ----    ----   -----
     0  02 0010 00100   VCC        cbr1   M   03d25966     UP      none
     2  02 0012 00100   VCC        cbr3   M   03d2598d     UP      none
     3  02 0013 00100   VCC      vbr1rt   M   03d2599a     UP      none
```

```
    4  02 0014 00100   VCC      vbr2rt   M   03d259a1     UP      none
    6  02 0016 00100   VCC     vbr1nrt   M   03d259bd     UP      none
   10  02 0020 00100   VCC        ubr2   M   03d259dd     UP      none
   12  02 0022 00100   VCC      abrstd   M   03d259f2     UP      none
   13  02 0081 00100   VCC      abrstd   M   03db32b0     UP      none
   14  02 0082 00100   VCC        ubr2   M   03db5176     UP      none
   15  02 0083 00100   VCC      abrstd   M   03db54da     UP      none
   16  02 0084 00100   VCC        ubr2   M   03db54e4     UP      none
   17  02 0085 00100   VCC      abrstd   M   03db54f4     UP      none
   18  02 0086 00100   VCC        ubr2   M   03db54fc     UP      none

MGX8850.5.AXSME.a >
```

dspcosbdbgcnf

Display COSB Debugging Configuration—AXSM

Display the ports on the current AXSM that have COSB enabled.

Note To enable the COSB debugging feature, enter the **cnfcosbdbg** command.

Syntax

dspcosbdbgcnf

Syntax Description

None.

Related Commands

clrcosbdbgcnt, **cnfcosbdbg**, **dspcosbdbgcnt**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Display the ports on the current AXSM that have COSB debugging enabled.

```
M8850_NY.1.AXSM.a > dspcosbdbgcnf
port     CosB
 11       16
```

dspcosbdbgcnt

Display COS Debugging Counters—AXSM

Display all class of service buffer (COSB) debugging counters for the specified logical interface (or port) on the current AXSM.

Note To enable the COSB debugging feature, enter the **cnfcosbdbg** command.

Syntax

dspcosbdbgcnt <*ifNum*> <*cosb*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 64.
cosb	Class of service buffer (COSB) identifier, in the range from 1 through 16.

Related Commands

clrcosbdbgcnt, **cnfcosbdbg**, **dspcosbdbgcnt**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Display the counters for COSB 16 on logical interface (or port) 11.

```
M8850_NY.1.AXSM.a > dspcosbdbgcnt 11 16
                                 Ingress          Egress
Instantaneous Qdepth:                  0               0
Average Qdepth:                        0               0
CLP0 dscd cells:                       -               0
CLP1 dscd cells:                       -               0
CLP0 departure cells:                  -         6172358
CLP1 departure cells:                  -               0
Arr CLP0 EFCI0 cells cnt[1]:           -            2410
Arr CLP0 EFCI1 cells cnt[1]:           -               0
Arr CLP1 EFCI0 cells cnt[1]:           -               0
Arr CLP1 EFCI1 cells cnt[1]:           -               0
Dep CLP0 EFCI0 cells cnt[1]:           -            2410
Dep CLP0 EFCI1 cells cnt[1]:           -               0
Dep CLP1 EFCI0 cells cnt[1]:           -               0
Dep CLP1 EFCI1 cells cnt[1]:           -               0
Arr CLP0 EFCI0 cells cnt[2]:           -               0
Arr CLP0 EFCI1 cells cnt[2]:           -               0
Arr CLP1 EFCI0 cells cnt[2]:           -               0
Arr CLP1 EFCI1 cells cnt[2]:           -               0
Dep CLP0 EFCI0 cells cnt[2]:           -               0
Dep CLP0 EFCI1 cells cnt[2]:           -               0
Dep CLP1 EFCI0 cells cnt[2]:           -               0
```

```
Type <CR> to continue, Q<CR> to stop:
Dep CLP1 EFCI1 cells cnt[2]:          -              0
Arr CLP0 EFCI0 cells cnt[3]:          -              0
Arr CLP0 EFCI1 cells cnt[3]:          -              0
Arr CLP1 EFCI0 cells cnt[3]:          -              0
Arr CLP1 EFCI1 cells cnt[3]:          -              0
Dep CLP0 EFCI0 cells cnt[3]:          -              0
Dep CLP0 EFCI1 cells cnt[3]:          -              0
Dep CLP1 EFCI0 cells cnt[3]:          -              0
Dep CLP1 EFCI1 cells cnt[3]:          -              0
Arr CLP0 EFCI0 cells cnt[4]:          -              0
Arr CLP0 EFCI1 cells cnt[4]:          -              0
Arr CLP1 EFCI0 cells cnt[4]:          -              0
Arr CLP1 EFCI1 cells cnt[4]:          -              0
Dep CLP0 EFCI0 cells cnt[4]:          -              0
Dep CLP0 EFCI1 cells cnt[4]:          -              0
Dep CLP1 EFCI0 cells cnt[4]:          -              0
Dep CLP1 EFCI1 cells cnt[4]:          -              0
Arr CLP0 EFCI0 cells cnt[5]:          -              0
Arr CLP0 EFCI1 cells cnt[5]:          -              0
Arr CLP1 EFCI0 cells cnt[5]:          -              0
Arr CLP1 EFCI1 cells cnt[5]:          -              0
Dep CLP0 EFCI0 cells cnt[5]:          -              0

Type <CR> to continue, Q<CR> to stop:
Dep CLP0 EFCI1 cells cnt[5]:          -              0
Dep CLP1 EFCI0 cells cnt[5]:          -              0
Dep CLP1 EFCI1 cells cnt[5]:          -              0
Arr CLP0 EFCI0 cells cnt[6]:          -              0
Arr CLP0 EFCI1 cells cnt[6]:          -              0
Arr CLP1 EFCI0 cells cnt[6]:          -              0
Arr CLP1 EFCI1 cells cnt[6]:          -              0
Dep CLP0 EFCI0 cells cnt[6]:          -              0
Dep CLP0 EFCI1 cells cnt[6]:          -              0
Dep CLP1 EFCI0 cells cnt[6]:          -              0
Dep CLP1 EFCI1 cells cnt[6]:          -              0
Arr CLP0 EFCI0 cells cnt[7]:          -              0
Arr CLP0 EFCI1 cells cnt[7]:          -              0
Arr CLP1 EFCI0 cells cnt[7]:          -              0
Arr CLP1 EFCI1 cells cnt[7]:          -              0
Dep CLP0 EFCI0 cells cnt[7]:          -              0
Dep CLP0 EFCI1 cells cnt[7]:          -              0
Dep CLP1 EFCI0 cells cnt[7]:          -              0
Dep CLP1 EFCI1 cells cnt[7]:          -              0
Arr CLP0 EFCI0 cells cnt[8]:          -              0
Arr CLP0 EFCI1 cells cnt[8]:          -              0
Arr CLP1 EFCI0 cells cnt[8]:          -              0

Type <CR> to continue, Q<CR> to stop:
Arr CLP1 EFCI1 cells cnt[8]:          -              0
Dep CLP0 EFCI0 cells cnt[8]:          -              0
Dep CLP0 EFCI1 cells cnt[8]:          -              0
Dep CLP1 EFCI0 cells cnt[8]:          -              0
Dep CLP1 EFCI1 cells cnt[8]:          -              0
Board memory full dscd:               -              0
Port memory full dscd:                -              0
CoS memory full dscd:                 -              0
CoS CLP Hi dscd:                      -              0
CoS CLP State Dscd:                   -              0
CoS EPD0 SOF dscd:                    -              0
CoS EPD1 SOF dscd:                    -              0
VC thresholds dscd:                   -              0
```

dspCproCnfg

Display Connection Programming Configuration—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspCproCnfg** command to display the current connection provisioning database for the current AXSM.

Note The **dspCproCnfg** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspCproCnfg

Syntax Description

None.

Related Commands

dspcprotbls

Attributes

Log: no	State: active/standby	Privilege: ENG_GP

Example

Display the current connection programming configuration for the current AXSM.

```
M8850_LA.1.AXSM.a > dspCproCnfg
           HARD CODED CONFIGURATION
Connection Db version                 : 33554432
Maximum possible conn. records        : 65536
Maximum possible records per db table : 8192
Maximum possible records per segment  : 0320
Total logical interfaces in this card : 0064
            DERIVED CONFIGURATION
Number of conn. db tables             : 0008
Number of segments per conn. db table : 0026
Total number of segments              : 0208
            DYNAMIC INFORMATION
Optimal segment for next allocation   : 0000
Optimal table for next allocation     : 00
Total configured conns (by segment)   : 0000
Total configured conns (by interface) : 0000
Last valid record in db               : 0000

M8850_LA.1.AXSM.a >
```

dspcprotbls

Display Connection Programming Tables—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspcprotbls** command to display the connection tables in the connection provisioning database for the current AXSM.

> **Note** The **dspcprotbls** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspcprotbls

Syntax Description

None.

Related Commands

dspCproCnfg

Attributes

Log: no	State: active/standby	Privilege: ENG_GP

Example

Display the connection programming tables for the current AXSM.

```
M8850_LA.1.AXSM.a > dspcprotbls

*********ALLOCATIONS IN A TABLE ***********
Cumulative connection count : 0000

M8850_LA.1.AXSM.a >
```

dspDevErr

Display Device Errors —AXSM, AXSM-E, AXM-XG

Display errors for the specified device.

Syntax

dspDevErr <*device name*>

Syntax Description

device name	Device name. On the AXSM and AXSME, the valid devices are: • QE48 • HUMVEE • ATLAS • UDP • CBC • NILE4 On the AXSM-XG, the valid devices are: • TALOS • EUROPA • UDP192 • HERC • MERC

Related Commands

dspDevErrHist

Attributes

Log: no	State: active/standby/init	Privilege: ANY

Example

Display the device errors on the device named “CBC”.

```
M8850_NY.1.AXSM.a > dspDevErr CBC


                        CURRENT ERROR COUNT FOR DEVICE CBC
                        ------- ----- ----- --- ------ ---

Error Type    Total Errors
----------    ----- ------
```

```
 CBC SLV ERR        0
 CBC SLV DTE        0
CBS INGR PAR        0
CBC ECIC PAR        0
```

dspDevErrHist

Display Device Error History—AXSM, AXSM-E, AXM-XG

Display the error count history for the specified device.

Syntax

dspDevErr <*device name*>

Syntax Description

device name	Device name.4 On the AXSM and AXSME, the valid devices are: • QE48 • HUMVEE • ATLAS • UDP • CBC • NILE4 On the AXSM-XG, the valid devices are: • TALOS • EUROPA • UDP192 • HERC • MERC

Related Commands

dspDevErr

Attributes

Log: no	State: active/standby/init	Privilege: ANY

Example

Display the device error count history on the device named "HUMVEE".

```
M8850_NY.1.AXSM.a > dspdeverrhist HUMVEE


                        HISTORY ERROR COUNT FOR DEVICE HUMVEE
                        ------- ----- ----- --- ------ ------

Error Type    Total Errors
----------    ----- ------
```

```
      XCVR LOS        0
 CODE VIOLATE         0
    DISPARITY         0
 PARAL PARITY         0
    CTRL CRC8         0
    PYLD CRC8         0
      SAR I/F         0
  GENERAL ERR         0



M8850_NY.1.AXSM.a >
```

dspegrbucketcnt

Display Egress Bucket Counters—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays selected statistical counters for the specified 15 minute interval (*intvl*) for all lines and virtual interfaces on the card.

Syntax

dspegrbucketcnt <*intvl*>

Syntax Description

intvl	The time interval to display (0–96). 0 is the current 15-minute interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 being the oldest 15-minute interval.

Related Commands

dspingbucketcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.1.10.AXSME.a > dspegrbucketcnt 0
Line        Total Cells
               Received
------- ---------------
1.1                   0
1.2                   0
1.3                   0
1.4                   0
1.5                   0
1.6                   0
1.7                   0
1.8                   0
2.1                   0
2.2                   0
2.3                   0
2.4                   0

IfNum     Total Cells     Total Cells
             Received       Discarded
----- --------------- ---------------
1                   0               0
2                   0               0
```

dspfdr

Display Feeder—AXSM, AXSM-E, AXSM-XG

Displays the configuration information for the feeder on the specified port (*ifNum*). The interface numbers of active ports are displayed in the **dspports** command report.

For more detailed information on configuring a feeder, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Note This command is unsupported on a Cisco MGX 8950 switch.

Syntax

dspfdr <*ifNum*>

Syntax Description

ifNum	The interface number of the port on which to display the feeder information. The interface numbers of active ports are displayed in the **dspports** command report.

Related Commands

addfdr, delfdr, dspfdrs

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.11.AXSMXG.a > dspfdr 126
   Feeder Interface Number        : 126
   Feeder Name                    : pop1-oc3
   Feeder LAN IP Address          : 172.29.22.60
   Feeder Network IP Address      : 10.1.1.1
   Feeder Remote Shelf            : 1
   Feeder Remote Slot             : 7
   Feeder Remote Port             : 1
   Feeder Type                    : PAR
   Feeder Model Number            : 8850
   Feeder LMI Configuration       : Up
   Feeder Lmi Link Status         : Up
   Feeder Alarms                  : Minor
```

dspfdrs

Display Feeders—AXSM, AXSM-E, AXSM-XG

Displays all feeders on all ports on the AXSM card and their information.

Note This command is unsupported on a Cisco MGX 8950 switch.

For more detailed information on configuring a feeder, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Syntax

dspfdrs

Related Commands

addfdr, delfdr, dspfdr

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.11.AXSMXG.a > dspfdrs
  IF     Remote    Remote          Rmt      Rmt      LMI     LMI    LMI
  No.    Name      IP              Slot     Port     Admin   Oper   Alarms
  ---    ------    ------------    -----    -----    -----   ----   ------
   11   MGX8850      192.0.0.0      11       10        Up       Up     Major
   12   MGX8850      192.0.0.0      11       11        Up       Up     Major
   13   MGX8850      192.0.0.0      11       12        Up       Up     Major
   14   MGX8850      192.0.0.0      11       13        Up       Dn     Clear
  126   pop1-oc3      10.1.1.1       7        1        Up       Up     Minor

MGX8850.11.AXSMXG.a >
```

dspfdrstat

Display Feeder Statistics—AXSM, AXSM-E, AXSM-XG

Displays the LMI and node statistics for the feeder on the specified port (*ifNum*). The interface numbers of active ports are displayed in the **dspports** command report.

Note This command is unsupported on a Cisco MGX 8950 switch.

For more detailed information on configuring a feeder, refer to the *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2*.

Syntax

dspfdrstat <*ifNum*>

Syntax Description

ifNum	The interface number of the port on which to display the feeder statistics. The interface numbers of active ports are displayed in the **dspports** command report.

Related Commands

clrfdrstat

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.11.AXSMXG.a > dspfdrstat 126

STATUS REPORT ENQUIRY transmitted : 1
STATUS REPORT ENQUIRY received    : 6617
STATUS REPORT transmitted         : 6617
STATUS REPORT received            : 1
UPDATE STATUS transmitted         : 16
UPDATE STATUS received            : 11
UPDATE STATUS ACK transmitted     : 11
UPDATE STATUS ACK received        : 16
Invalid PDU received              : 0
Invalid PDU length received       : 0
Invalid PDU IEs received          : 0
Invalid Transaction Num received  : 0
Unknown PDU type received         : 0

NODE STATUS enquiry transmitted   : 7250
NODE STATUS enquiry received      : 5362
NODE STATUS ack transmitted       : 5362
NODE STATUS ack received          : 7249
NODE STATUS degrade transmitted   : 0
NODE STATUS degrade received      : 0
```

```
NODE STATUS delete transmitted    : 0
NODE STATUS delete received       : 0
NODE STATUS unknown received      : 0
```

dspfile

Display File—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspfile** command to display the contents of a file on the hard drive in either ASCII (plain text) or hexadecimal format.

Syntax

dspfile <*filename*> [**-a**] [**-np**]

Syntax Description

filename	The name of the file to display.
-a	Optional keyword that specifies the ASCII (plain text) display of the file. Not all files can display in ASCII
-np	Optional keyword that specifies no paging for the text file.

Related Commands

None.

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

Display the "version" file first in ASCII format. This file is very small.

```
MGX8850.1.AXSM.a > dspfile version -a
BOOTFILE=pxm1e_003.000.000.000-D_mgx.fw.
MGX8850.1.AXSM.a >
```

dspframerdiagstat

Display Frame Receive Diagnostics Statistics—AXSM

Display the frame diagnostics statistics received by the specified line.

Syntax

dspframerdiagstats <*bay.line*>

Syntax Description

bay.line	The line number for which to display the frame receive diagnostics statistics. **Note** Enter the **dsplns** command to display valid numbers for all lines configured on the current AXSM.

Related Commands

Attributes

Log: no	State: active/standby	Privilege: ANYUSER

Example

Display the frame diagnostics statistics received by line 1.1.

```
M8850_NY.1.AXSM.a > dspframerdiagstat 1.1
Framer 0:
    - rx Cell count: 5
    - corrected HEC count: 0
    - uncorrected HEC cell count: 0
    - rx IdleCell count: 1130653
    - tx Cell count: 6

M8850_NY.1.AXSM.a >
```

dsphotstandby

Display Hot Standby–AXSM

Validates the configuration information in the RAM of the current standby card against the configuration information in the database on the PXM controller card disk and displays the results.

Syntax

dsphotstandby <*user_option*>

Syntax Description

user_option	Currently, there is only one user option. 1 – Validate Provisioned RAM against Disk Data

Related Commands

None.

Attributes

Log: yes	State: standby	Privilege: SERVICE_GP

Example

```
MGX8850.5.AXSMXG.s > dsphotstandby 1
    Checking Card DB record ...    OK
    Checking Line DB records ...    OK
    Checking APS line DB records ...    OK
    Checking ATMIF DB records ...    OK
    Checking Resource partition DB records ...    OK
    Checking Path DB records ...    OK
    Checking Conn DB ...    OK

MGX8850.5.AXSMXG.s >
```

dspilmi

Display ILMI—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Display the configuration for the integrated local management interface (ILMI) on a specific port. The information in the **dspilmi** output was configured through the **cnfilmi** command.

Syntax

dspilmi <*ifNum*> <*partId*>

Syntax Description

ifNum	The logical interface (or AXSM port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
partId	The range for partition identifier is as follows: • AXSM: 1–5 • AXSM-E, AXSM-XG: 1–20

Related Commands

cnfilmi, **dspilmis**, **dspilmicnt**, **clrilmicnt**

Attributes

Log: nolog	State: active, standby	Privilege: ANYUSER

Example

```
M8950_DC.5.AXSM.a > dspilmi 11 1
Configuration :
------------- :
Port      :       11      SigVpi : 11
Partition :        1      SigVci : 16

IfIndex   : 17111051      S:Keepalive Intvl :      1
SessionId :        1      T:conPoll Intvl   :      5
Ilmi Trap :   enable      K:conPoll InactvFactor : 4

Agent     :   enable      EnFromCtrlr  :   enable
Poll      :   enable      ModLocalAttr :   enable
AddrReg   :   enable      ServReg      :  disable
AutoCnfg  :   enable

ILMI Protocol :
---------------
State      : Verifying
Last Event : Get Response, Connectivity Verified
IME Type   : symmetric
IF Type    : PNNI
```

```
Peer Info :
-----------
IfName        : atmVirtual.05.1.1.11
Sys Id        : 0 1 100 68 70 92
If Identifier : 0x105180b
Sys Up Time   : 0x25248b1c
Version       : 3
Addr Admin    : enable

M8950_DC.5.AXSM.a >
```

dspilmicnt

Display ILMI Counters—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays the ILMI counters for a particular resource partition on a particular logical port.

Syntax

dspilmicnt <*ifNum*> <*partId*>

Syntax Description

ifNum	The logical interface (or AXSM port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
partId	The range for partition identifier is as follows: • AXSM: 1–5 • AXSM-E, AXSM-XG: 1–20

Related Commands

cnfilmi, **dspilmi**, **dspilmis**, **clrilmicnt**, **dnilmi**, **upilmi**

Attributes

Log: nolog	State: active, standby	Privilege: ANYUSER

Example

Display the ILMI counters for logical port 1 on the current AXSM card.

```
MGX8850.1.AXSM.a > dspilmicnt 1 1
If Number                  : 1
Partition Id               : 1
SNMP Pdu Received          : 0
GetRequest Received        : 0
GetNext Request Received   : 0
SetRequest Received        : 0
Cold Start Trap Received   : 0
GetResponse Received       : 0
GetResponse Transmitted    : 0
GetRequest Transmitted     : 0
Cold Start Trap Transmitted : 0
VPC Trap Transmitted       : 0
VCC Trap Transmitted       : 0
Unknown Type Received      : 0
ASN1 Pdu Parse Error       : 0
No Such Name Error         : 0
Pdu Too Big Error          : 0

MGX8850.11.AXSME.a >
```

dspilmis

Display ILMI Configurations—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dspilmis** command lets you display the configuration of all integrated local management interfaces (ILMIs) on the service module.

Syntax

dspilmis

Related Commands

cnfilmi, dspilmi, dspilmicnt

Attributes

Log: nolog	State: active, standby	Privilege: ANYUSER

Example

Display all ILMIs on the current service module.

```
MGX8850.1.AXSM.a > dspilmis

    Sig. rsrc  Ilmi  Sig  Sig Ilmi  S:Keepalive T:conPoll K:conPoll
    Port Part State  Vpi  Vci Trap  Interval    Interval  InactiveFactor
    ---- ----  ---- ---- ---- --- ------------  ---------- ----------
    1    2    On     0    16    On          1          5          4
    2    2   Off     0    16    On          1          5          4
    3    2   Off     0    16    On          1          5          4

MGX8850.1.AXSM.a >
```

dspimagrp

Display IMA Group—AXSM-32-T1E1-E

Displays the following configuration information for the specified IMA *group*.

Information	Description
IMA group number	The number of the IMA group you provide to **dspimagrp**.
NE IMA version	The IMA version at the near end (was specified by **addimagrp**).
Group symmetry	The group symmetry mode adjusted during the group start-up.
Minimum links in TX direction	The minimum number of links that must be active on the transmit side for the IMA group to be operational.
Minimum links in RX direction	The minimum number of links that must be active on the receive side for the IMA group to operational.
NE TX clock mode	The transmit clocking mode used by the near-end IMA group.
FE TX clock mode	The transmit clocking mode used by the far-end IMA group.
TX Frame length	The frame length used by the IMA group in the transmit direction.
RX Frame length	The frame length used by the IMA group in the receive direction.
Group GTSM	The current state of the IMA group (the GTSM state).
NE group state	The state of the near-end IMA group. For example: start-up state.
FE group state	The state of the far-end IMA group. For example: start-up state.
Group failure status	Could be near end state is unknown, failed, start-up, etc.
TX IMA ID	The IMA ID currently in use by the near-end IMA function.
RX IMA ID	The IMA ID currently in use by the far-end IMA function.
Max cell rate	The maximum number of cells per second for this IMA group.
Avail cell rate	The amount of bandwidth in cells per second available to this group.
Differential delay maximum	The maximum number of milliseconds of differential delay among the links that are tolerated on this interface.
Diff delay maximum observed	The latest maximum differential delay (in milliseconds) observed between the links having the least and most link propagation delay, among the receive links currently configured in the IMA group.
Accumulated delay	The accumulated delay for the current IMA group in milliseconds.
GTSM up integration time	Integration UP time for alarm integration. Persisting checking time to enter a failure alarm condition, in case of LIF, LODS, RFI-IMA fault failure alarms. Units of measure are milliseconds.
GTSM down integration time	Integration DOWN time for alarm integration. Persisting clearing time to exit the LIF, LODS, RFI-IMA failure alarm conditions. Units of measure are milliseconds.
Number TX configured links	The number of transmit links that are configured in this IMA group.
Number RX configured link	The number of receive links that are configured in this IMA group.
Number of active TX links	The number of transmit links that are active in this IMA group.
Number of actual RX links	The number of receive links that are active in this IMA group.

Information	Description
Least delay link	The *ifIndex* of the link configured in the IMA group that has the smallest link propagation delay. A value of zero may appear if no link has been configured in the IMA group or if the link with the smallest link propagation delay has not yet been determined.
Tx timing reference link	The *ifIndex* of the transmit timing reference link used by the near-end for IMA data cell clock recovery from the ATM layer. A value of zero may appear if no link has been configured in the group or if the transmit timing reference link has not yet been selected.
Rx timing reference link	The *ifIndex* of the receive timing reference link used by the near-end for IMA data cell clock recovery toward the ATM layer. A value of zero may appear if no link has been configured in the group or if the receive timing reference link has not yet been selected.
Group running seconds	The number of seconds the local IMA group has been running.
Alpha value	This is the 'alpha' value used to specify the number of consecutive invalid ICP cells to be detected before moving to the IMA Hunt state from the IMA Sync state.
Beta value	This is the 'beta' value used to specify the number of consecutive errored ICP cells to be detected before moving to the IMA Hunt state from the IMA Sync state.
Gamma value	This is the 'gamma' value used to specify the number of consecutive valid ICP cells to be detected before moving to the IMA Sync state from the IMA PreSync state.
TX OAM label	IMA OAM Label value transmitted by the near-end IMA unit.
RX OAM label	IMA OAM Label value transmitted by the far-end IMA unit. A 0 likely means that the IMA unit has not yet received an OAM label from the far-end IMA unit.
Test pattern procedure status	The current link test procedure status—enabled or disabled, for example.
Test link	The current link under test
Test pattern	The current link test pattern

Syntax

dspimagrp <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

addimagrp, delimagrp, dspimagrpcnt, dspimagrps, cnfimagrp, rstrtimagrp, dspimalnk, addimalnk, delimalnk

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display the configuration for bay 1, group 1.

```
MGX8850.10.AXSME.a > dspimagrp 1.1
    Group Number                     : 1.1
    NE IMA Version                   : Version 1.0
    Group Symmetry                   : Symm  Operation
    Tx Min Num Links                 : 1
    Rx Min Num Links                 : 1
    NE TX Clk Mode                   : CTC
    FE TX Clk Mode                   : ITC
    Tx Frame Len                     : 128
    Rx Frame Len                     : 128
    Group GTSM                       : Down
    NE Group State                   : CfgAbort-Unsupp-ImaVer
    FE Group State                   : StartUp
    Group Failure Status             : StartUp FE
    Tx Ima Id                        : 11
    Rx Ima Id                        : 1
    Max Cell Rate (c/s)              : 8980
    Avail Cell Rate (c/s)            : 0
    Diff Delay Max  (msecs)          : 220
    Diff Delay Max Observed (msecs)  : 0
    Accumulated Delay (msecs)        : 0
    Clear Accumulated Delay Status   : Not In Progress
    GTSM Up Integ time(msecs)        : 10
    GTSM Dn Integ time(msecs)        : 1000
    Num Tx Cfg Links                 : 2
    Num Rx Cfg Links                 : 2
    Num Act Tx Links                 : 0
    Num Act Rx Links                 : 0
    Least Delay Link                 : Unknown
    Tx Timing Ref Link               : 1.1
    Rx Timing Ref Link               : Unknown
    Group Running Secs               : 0
    Alpha Val                        : 2
    Beta Val                         : 2
    Gamma Val                        : 1
    Tx OAM Label                     : 1
    Rx OAM Label                     : 0
    Test Pattern Procedure Status    : Disabled
    Test Link                        : Unknown
    Test Pattern                     : 255
    Stuff Cell Indication (frames)   : 1
MGX8850.10.AXSME.a >
```

dspimagrps

Display IMA Groups—AXSM-32-T1E1-E

Displays the following information for all configured IMA groups:

Information	Description
IMA group number	The configured IMA group number. This number is same as port number.
minimum links	Minimum number of active links required for the IMA group to be operational.
transmit M	Transmit frame length
receive M	Receive frame length
transmit clock mode	ITC, CTC
maximum differential delay	in mSec
Near-End IMA state	The current operational state of the near-end IMA Group State Machine.
Far-End IMA state	The current operational state of the far-end IMA Group State Machine.
IMA ver	The version of IMA in use by the IMA group.

Syntax

dspimagrps

Syntax Description

No parameters

Related Commands

dspimagrp

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.2.AXSME.a > dspimagrps

Ima  Min  Tx   Rx   Tx   Diff                 NE-IMA                    FE-IMA  IMA
Grp  Lnks Frm  Frm  Clk  Delay                 state                     state  Ver
          Len  Len  Mode (ms)
--------------------------------------------------------------------------------
1.14  16  128  128  CTC  100 CfgAbort-Unsupp-ImaVer  CfgAbort-Unsupp-ImaVer  1.0
1.15   2  256  256  CTC  275            Operational             Operational  1.1
1.16   2  256  256  CTC  100           Insuff Links            Insuff Links  1.1
```

dspimagrpalm

Display IMA Group Alarm—AXSM-32-T1E1-E

Displays the group number and alarm state for the specified IMA *group*. The possible alarms are as follows:

- imaAlarmLinkLif (1)
- imaAlarmLinkLods (2)
- imaAlarmLinkRfi (3)
- imaAlarmLinkTxMisConnect (4)
- imaAlarmLinkRxMisConnect (5)
- imaAlarmLinkTxFault (6)
- imaAlarmLinkRxFault (7)
- imaAlarmLinkTxUnusableFe (8)
- imaAlarmLinkRxUnusableFe (9)
- imaAlarmGroupStartupFe (10)
- imaAlarmGroupCfgAbort (11)
- imaAlarmGroupCfgAbortFe (12)
- imaAlarmGroupInsuffLinks (13)
- imaAlarmGroupInsuffLinksFe (14)
- imaAlarmGroupBlockedFe (15)
- imaAlarmGroupTimingSynch (16)

Syntax

dspimagrpalm <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

dspimagrpalms

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display the alarms for bay 1, group 16.

```
MGX8850.2.AXSME.a > dspimagrpalm 1.16
```

dspimagrpalms

Display IMA Group Alarms—AXSM-32-T1E1-E

Displays the group number and alarm state for each configured IMA group. The possible alarms are as follows:

- imaAlarmLinkLif (1)
- imaAlarmLinkLods (2)
- imaAlarmLinkRfi (3)
- imaAlarmLinkTxMisConnect (4)
- imaAlarmLinkRxMisConnect (5)
- imaAlarmLinkTxFault (6)
- imaAlarmLinkRxFault (7)
- imaAlarmLinkTxUnusableFe (8)
- imaAlarmLinkRxUnusableFe (9)
- imaAlarmGroupStartupFe (10)
- imaAlarmGroupCfgAbort (11)
- imaAlarmGroupCfgAbortFe (12)
- imaAlarmGroupInsuffLinks (13)
- imaAlarmGroupInsuffLinksFe (14)
- imaAlarmGroupBlockedFe (15)
- imaAlarmGroupTimingSynch (16)

Syntax

dspimagrpalms

Syntax Description

No parameters

Related Commands

dspimagrpalm

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display alarms for all IMA groups:

```
MGX8850.2.AXSME.a > dspimagrpalms
```

```
Group  Number             : 2.1
Alarm  State              : Clear

Group  Number             : 2.2
Alarm  State              : StartUp Ne

MGX8850.2.AXSME.a >
```

dspimagrpalmcnt

Display IMA Group Alarm Count—AXSM-32-T1E1-E

Displays the current alarm count for the specified IMA *group*.

Syntax

dspimagrpalmcnt <*group*>

Syntax Description

group	The bay (1 or 2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

clrimagrpalmcnt, clrimagrpalmcnts, clrimagrpcnts, clrimalnkcnts, dspimagrpalmcnt, dspimagrpbucketcnt, dspimalnkbucketcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.11.AXSME.a > dspimagrpalmcnt 1.1
  Group Number                     : 1.1
  Group Running Secs               : 0
  Group Unavail Secs               : 0
  Group Num NE Failure             : 0
  Group Num FE Failure             : 0
  Group Avail Cell Rate            : 0
```

dspimagrpbucketcnt

Display IMA Group Bucket Count—AXSM-32-T1E1-E

Displays the cell count in the policing bucket for the specified IMA *group* at the specified interval (*intvl*).

Syntax

dspimagrpbucketcnt <*group*> <*intvl*>

Syntax Description

group	The bay (1 or 2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16
intvl	The time interval to display (0–96). 0 is the current 15-minute interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 being the oldest 15-minute interval.

Related Commands

clrimagrpalmcnt, clrimagrpalmcnts, clrimagrpcnts, clrimalnkcnts, dspimagrpalmcnt, dspimalnkbucketcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.6.AXSME.a > dspimagrpbucketcnt 2.1 1
  Group Number             : 2.1
  Interval Number          : 1

  Unavailable Seconds      :          0
  Near End Failures        :          0
  Far End Failures         :          0
```

dspimagrpcnt

Display IMA Group Counters—AXSM-32-T1E1-E

Displays the following performance and statistic counter information for the specified IMA *group*:

Syntax

dspimagrpcnt <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

clrimagrpcnts

Attributes

Log: no   State: active   Privilege: ANYUSER

Example

```
MGX8850.6.AXSME.a > dspimagrpcnt 2.1 1
Ima Group         : 2.1
Interval          : 1
                            Ingress           Egress
CLP0 Cells                 : 0                  0
CLP1 Cells                 : 0                  0
Valid OAM Cells            : 0                  0
Err OAM Cells              : 0                  0
Rcv Valid RM Cells         : 0                  0
Invalid VPI/VCI/PTI Cells  : 0
Rcv Idle Cells             : 0
Non-zero GFC Cells         : 0
Last Unknown VPI           : 506
Last Unknown VCI           : 47833
Discard HecErr Cells       : 0
Corrected HecErr Cells     : 0
```

dspimalnk

Display IMA Link—AXSM-32-T1E1-E

Displays the following configuration information for the specified IMA link (*bay.link*).

Field	Description
IMA Link Number	The bay and link number in the format *bay.link*.
IMA Link Group Number	The link and group number in the format *link.group*.
LinkRelDelay	The latest measured delay (in milliseconds) on this link relative to the link, in the same IMA group, with the least delay.
LinkNeTxState	The current state of the near-end transmit link
LinkNeRxState	The current state of the near-end receive link.
LinkFeTxState	The current state of the far-end transmit link as reported via ICP cells.
LinkFeRxState	The current state of the far-end receive link as reported via ICP cells.
LinkNeRxFailureStatus	The current link failure status of the near-end receive link.
LinkFeRxFailureStatus	The current link failure status of the far-end receive link as reported via ICP cells.
ImaLink TxLid	The outgoing LID used currently on the link by the local end. This value has meaning only if the link belongs to an IMA group.
ImaLink RxLid	The incoming LID used currently on the link by the remote end as reported via ICP cells. This value has meaning only if the link belongs to an IMA group.
LinkRxTestPattern	This object identifies the test pattern received in the ICP Cell (octet 17) on the link during the IMA Test Pattern Procedure. This value may then be compared to the transmitted test pattern.
LinkTestProcStatus	This value indicates the current state of the Test Pattern Procedure: • disabled: the test is not running • operating: the test is running and no error has been found on this interface. • linkFail: an error has been detected on this link during the test.
LinkLifIntUpTime	LIF integration up time. Range: 0–400000 milliseconds. The LIF (Loss of IMA Frame) defect is the occurrence of persistent OIF (Out of IMA Frame) anomalies for at least 2 IMA frames.
LinkLifIntDnTime	LIF integration down time. Range: 0–400000 milliseconds. The LIF (Loss of IMA Frame) defect is the occurrence of persistent OIF (Out of IMA Frame) anomalies for at least 2 IMA frames.

LinkLodsIntUpTime	LODS integration up time. Range 0–100000 milliseconds. The LODS (Link Out of Delay Synchronization) is a link event indicating that the link is not synchronized with the other links within the IMA group.
LinkLodsIntDnTime	LODS integration down time. Range 0–100000 milliseconds. The LODS (Link Out of Delay Synchronization) is a link event indicating that the link is not synchronized with the other links within the IMA group.

Syntax

dspimalnk <*link*>

Syntax Description

link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16

Related Commands

addimalnk, delimalnk

Attributes

Log: no State: active Privilege: ANYUSER

Example

Display the configuration information for IMA link number 2 on bay 9.

```
MGX8850.6.AXSME.a > dspimalnk 2.9
IMA Link Number : 2.9
IMA Link Group Number : 2.1
LinkRelDelay (msec) : 0
LinkNeTxState : Unusable-Failed
LinkNeRxState : Not In Grp
LinkFeTxState : Not In Grp
LinkFeRxState : Not In Grp
LinkNeRxFailureStatus : Lif Fail
LinkFeRxFailureStatus : No Failure
ImaLink TxLid : 8
ImaLink RxLid : 255
LinkRxTestPattern : 255
LinkTestProcStatus : Disabled
LinkLifIntUpTime : 2500
LinkLifIntDnTime : 10000
LinkLodsIntUpTime : 2500
LinkLodsIntDnTime : 10000
```

dspimalnks

Display IMA Links—AXSM-32-T1E1-E

Displays the following configuration information for IMA links.

Information	Description
imaLinkIfIndex	This corresponds to the ifIndex of the MIB-II interface on which this link is established. This object also corresponds to the logical number (ifIndex) assigned to this IMA link.
imaLinkGroupIndex	The value which identifies the IMA group (imaGroupIndex) of which this link is a member.
imaLinkRelDelay	The latest measured delay on this link relative to the link, in the same IMA group, with the least delay.
imaLinkNeTxState	The current state of the near-end transmit link
imaLinkNeRxState	The current state of the near-end receive link.
imaLinkNeRxFailureStatus	The current link failure status of the near-end receive link.
imaLinkTxLid	The outgoing LID used currently on the link by the local end. This value has meaning only if the link belongs to an IMA group.
imaLinkRxLid	The incoming LID used currently on the link by the remote end as reported via ICP cells. This value has meaning only if the link belongs to an IMA group.

Syntax

dspimalnks

Syntax Description

No parameters

Related Commands

dspimalnk

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.2.AXSME.a> dspimalnks

Link   Grp   Rel            Ne               Ne                NeRx    Tx   Rx
Num    Num   Dly            Tx               Rx                Fail   Lid  Lid
            (ms)          State            State            Status
-------------------------------------------------------------------------------
 2.9   2.1     0           Usable       Not In Grp        Lif Fail    8  255
2.10   2.1     0           Usable       Not In Grp        Lif Fail    9  255
```

```
2.11   2.1     0            Active           Active      No Failure   10   10
2.12   2.1     0   Unusable-Failed  Unusable-Failed        Lif Fail   11   11
2.13   2.2     0   Unusable-Failed       Not In Grp        Lif Fail   12  255
2.14   2.2     0   Unusable-Failed       Not In Grp        Lif Fail   13  255
2.15   2.2     0   Unusable-Failed       Not In Grp        Lif Fail   14  255
2.16   2.2     0   Unusable-Failed       Not In Grp        Lif Fail   15  255

MGX8850.13.AXSME.a >
```

dspimalnkalm

Display IMA Link Alarm—AXSM-32-T1E1-E

Displays the alarm state of the specified IMA link (*bay.link*).

Information	Description
imaLinkNumber	The IMA link number
Alarm	The IMA link alarm state
imaLinkNeRxFailureStatus	The IMA link alarm type

Syntax

dspimalnkalm <*link*>

Syntax Description

link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16

Related Commands

dspimalnkalms

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display the alarms for bay 1, link 16.

```
MGX8850.13.AXSME.a > dspimalnkalm 2.9

Link  Number           : 2.9
Alarm State            : Lif Fail

MGX8850.13.AXSME.a >
```

dspimalnkalms

Display IMA Link Alarms—AXSM-32-T1E1-E

Displays the alarms states of all IMA links.

Information	Description
imaLinkNumber	The IMA link number
Alarm	The IMA link Alarm State

Syntax

dspimalnkalms

Syntax Description

No parameters

Related Commands

dspimalnkalm

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display alarms for all IMA links:

```
MGX8850.2.AXSME.a > dspimalnkalms

Link  Number           : 2.9
Alarm State            : Lif Fail

Link  Number           : 2.10
Alarm State            : Lif Fail

Link  Number           : 2.11
Alarm State            : Clear

Link  Number           : 2.12
Alarm State            : Lif Fail

Link  Number           : 2.13
Alarm State            : Lif Fail

Link  Number           : 2.14
Alarm State            : Lif Fail

MGX8850.13.AXSME.a >
```

dspimalnkbucketcnt

Display IMA Link Bucket Count—AXSM-32-T1E1-E

Displays the cell count in the policing bucket for the specified IMA *link* at the specified interval (*intvl*).

Syntax

dspimalnkbucketcnt <*link*> <*intvl*>

Syntax Description

link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16
intvl	The time interval to display (0–96). 0 is the current 15-minute interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 being the oldest 15-minute interval.

Related Commands

clrimagrpalmcnt, clrimagrpalmcnts, clrimagrpcnts, clrimalnkcnts, dspimagrpalmcnt, dspimagrpbucketcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.6.AXSME.a > dspimalnkbucketcnt 2.1 1
  Link Number               : 2.1
  Interval Number           : 1

                              Near End           Far End
  SESs                      : 0                  0
  Unavailable Seconds       : 900                900
  Tx Unusable Seconds       : 900                900
  Rx Unusable Seconds       : 900                900
  Tx Stuffs                 : 1592
  Rx Stuffs                 : 0
  IMA Violations            : 0
  OIF Anomalies             : 0
```

dspimalnkcnt

Display IMA Link Counters—AXSM-32-T1E1-E

Displays the following performance and statistic counter information for an IMA link (*bay.link*).

Information	Description
IMA Link Number	The number that identifies the IMA link (imaLinkIndex).
IMA Group Number	The number that identifies the IMA group (imaGroupIndex).
IMA Link Violations	The count of errored, invalid, or missing ICP cells, except during SES-IMA or UAS-IMA conditions.
IMA Link OIF Anomalies	The number of OIF anomalies, except during SES-IMA or UAS-IMA conditions, at the near-end. This is an optional attribute.
IMA Link NE SES	The count of one-second intervals containing less than 30 percent of the ICP cells counted as IV-IMAs, or one or more link defects (such as LOS, OOF/LOF, AIS, LIF, LODS, or LCD) except during UAS-IMA condition.
IMA Link FE SES	The count of one-second intervals containing one or more RDI-IMA defects, except during UAS-IMA-FE condition.
IMA Link NE UnavSec	The count of unavailable seconds at the near-end: unavailability begins at the onset of 10 contiguous SES-IMA and ends at the onset of 10 contiguous seconds with no SES-IMA.
IMA Link FE UnavSec	The count of unavailable seconds at the far-end: unavailability begins at the onset of 10 contiguous SES-IMA-FE and ends at the onset of 10 contiguous seconds with no SES-IMA-FE.
IMA Link NE Tx UnusSec	The count of unusable seconds for transmitting at the near-end Tx LSM.
IMA Link NE Rx UnusSec	The count of unusable seconds for receiving at the near-end Rx LSM.
IMA Link FE Tx UnusSec	The count of seconds with unusable indications for transmitting from the far-end Tx LSM.
IMA Link FE Rx UnusSec	The count of seconds with unusable indications for receiving from the far-end Rx LSM.
IMA Link NE Tx Num Fail	The number of times a near-end transmit failure alarm condition has been entered on this link.
IMA Link NE Rx Num Fail	The number of times a near-end receive failure alarm condition has been entered on this link.
IMA Link FE Tx Num Fail	The number of times a far-end transmit failure alarm condition has been entered on this link.
IMA Link FE Rx Num Fail	The number of times a far-end receive failure alarm condition has been entered on this link.
IMA Link Tx Stuffs	The count of stuffed events inserted in the transmit direction. This is an optional attribute.
IMA Link Rx Stuffs	The count of stuffed events detected in the receive direction. This is an optional attribute.
IMA Link Rx Error Free ICP Cells	The count of ICP cells received with no errors.

Syntax

dspimalnkcnt <*link*>

Syntax Description

link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16

Related Commands

dspimalnk

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.2.AXSME.a > dspimalnkcnt 1.2
   IMA Link Number                  : 1.2
   IMA Group Number                 : 1.2
   IMA Link Violations              : 0
   IMA Link OIF Anomalies           : 0
   IMA Link NE SES                  : 0
   IMA Link FE SES                  : 0
   IMA Link NE UnavSec              : 0
   IMA Link FE UnavSec              : 0
   IMA Link NE Tx UnusSec           : 0
   IMA Link NE Rx UnusSec           : 0
   IMA Link FE Tx UnusSec           : 0
   IMA Link FE Rx UnusSec           : 0
   IMA Link NE Tx Num Fail          : 0
   IMA Link NE Rx Num Fail          : 0
   IMA Link FE Tx Num Fail          : 0
   IMA Link FE Rx Num Fail          : 0
   IMA Link Tx Stuffs               : 2059
   IMA Link Rx Stuffs               : 2059
   IMA Link Rx Error Free ICP cells : 0
```

dspingbucketcnt

Display Ingress Bucket Counters—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays selected statistical counters for the specified 15-minute interval (*intvl*) for all the lines on card.

Syntax

dspingbucketcnt <*intvl*>

Syntax Description

intvl	The time interval to display (0–96). 0 is the current 15-minute interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 is the oldest 15-minute interval.

Related Commands

dspegrbucketcnt

Attributes

Log: nolog	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.1.10.AXSME.a > dspingbucketcnt
Line        Total Cells     Total Cells
               Received       Discarded
------- --------------- ---------------
1.1                   0               0
1.2                   0               0
1.3                   0               0
1.4                   0               0
1.5                   0               0
1.6                   0               0
1.7                   0               0
1.8                   0               0
2.1                   0               0
2.2                   0               0
2.3                   0               0
2.4                   0               0
```

dsplmi

Display Local Management Interface—AXSM, AXSM-XG

The **dsplmi** command lets you display details about an extended LMI on an AXSM logical interface. See also description of the **addlmi** command. Each LMI can support one of the following items:

- A feeder (Cisco MGX 8850 PXM1-based switch)
- A Service Expansion Shelf (SES)

Syntax

dsplmi <*ifNum*>

Syntax Description

ifNum	The logical interface number has a range of 1–60.

Related Command

dellmi, **uplmi**, **dnlmi**, **uplmi**, **clrlmistat**, **addlmi**, **dsplmis**, **dsplmistat**

Attributes

Log: yes	State: active	Privilege: ANYUSER

Example

```
MGX8850.11.AXSMXG.a > dsplmi 126
   LMI Interface Number        : 126
   LMI Remote Name             : pop1-oc3
   LMI IP Address              : 10.1.1.1
   LMI Remote Shelf            : 1
   LMI Remote Slot             : 7
   LMI Remote Port             : 1
   LMI Type                    : PAR
   LMI Model Number            : 8850
   LMI Configuration           : Up
   LMI Link Status             : Up
   LMI Alarms                  : Minor
```

dsplmis

Display Local Management Interfaces—AXSM, AXSM-XG

The **dsplmis** command lets you display general information about all extended LMIs (XLMIs) on an AXSM card. See also description of the **addlmi** command. Each LMI can support one of the following items:

- A feeder (Cisco MGX 8850 PXM1-based switch)
- A Service Expansion Shelf (SES)

Syntax

dsplmis

Syntax Description

No parameters

Related Command

dellmi, **uplmi**, **dnlmi**, **uplmi**, **clrlmistat**, **addlmi**, **dsplmi**, **dsplmistat**

Attributes

Log: yes	State: active	Privilege: ANYUSER

Example

Display all LMIs on the current AXSM. The display shows that only one LMI exists.

```
MGX8850.11.AXSMXG.a > dsplmis
  IF      Remote     Remote          Rmt       Rmt       LMI      LMI     LMI
  No.     Name       IP              Slot      Port      Admin    Oper    Alarms
  ---     ------     ------------    -----     -----     -----    ----    ------
   11     MGX8850       192.0.0.0      11        10         Up       Up     Major
   12     MGX8850       192.0.0.0      11        11         Up       Up     Major
   13     MGX8850       192.0.0.0      11        12         Up       Up     Major
   14     MGX8850       192.0.0.0      11        13         Up       Dn     Clear
  126     pop1-oc3       10.1.1.1       7         1         Up       Up     Minor
```

dsplmistat

Display Local Management Interface Statistics—AXSM, AXSM-XG

The **dsplmistat** command lets you display general statistics about an LMIs (XLMIs) on an AXSM interface. See also description of the **addlmi** command.

Syntax

dsplmistat <*ifNum*>

Syntax Description

ifNum	The logical interface number has a range of 1–60.

Related Command

dellmi, **uplmi**, **dnlmi**, **uplmi**, **clrlmistat**, **addlmi**, **dsplmi**, **dsplmis**

Attributes

Log: yes	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.11.AXSMXG.a > dsplmistat 126

STATUS REPORT ENQUIRY transmitted : 1
STATUS REPORT ENQUIRY received    : 6622
STATUS REPORT transmitted         : 6622
STATUS REPORT received            : 1
UPDATE STATUS transmitted         : 16
UPDATE STATUS received            : 11
UPDATE STATUS ACK transmitted     : 11
UPDATE STATUS ACK received        : 16
Invalid PDU received              : 0
Invalid PDU length received       : 0
Invalid PDU IEs received          : 0
Invalid Transaction Num received  : 0
Unknown PDU type received         : 0

NODE STATUS enquiry transmitted   : 7256
NODE STATUS enquiry received      : 5367
NODE STATUS ack transmitted       : 5367
NODE STATUS ack received          : 7255
NODE STATUS degrade transmitted   : 0
NODE STATUS degrade received      : 0
NODE STATUS delete transmitted    : 0
NODE STATUS delete received       : 0
NODE STATUS unknown received      : 0
MGX8850.11.AXSMXG.a >
```

dsplmitrace

Display Local Management Interface Trace—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dsplmitrace** command to display the contents of the local management interface (LMI) trace buffer.

Syntax

dsplmitrace

Syntax Description

None

Related Commands

clrlmitrace, cnflmitrace

Attributes

Log: no	State: active, standby	Privilege: CISCO_GP

Example

Display the contents of the current LMI trace buffer.

```
M8850_LA.1.AXSM.a > dsplmitrace
LMI Trace Buffer is empty

M8850_LA.1.AXSM.a >
```

dspln

Display Line—AXSM, AXSM-E, AXSM-XG

Display the characteristics of a physical line on an AXSM, AXSM-E, or AXSM-XG.

Note The alarm status for standby cards is reported as N/A because the alarm status of the standby card may not be the same as the active card.

Syntax (AXSM, AXSM-XG)

dspln <*bay.line*>

Syntax Description (AXSM, AXSM-XG)

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Syntax (AXSM-E)

dspln <-ds3|-e3|-sonet|-e1> <*bay.line*>

(AXSM-E)

lineType	Type of the line to be displayed.
bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Display Output

Information	Description
Line Number	The line line number interface being displayed. For example, ds3.
Admin Status	Indicates whether the line is up or down.
Loopback	Indicates whether the line is in loopback mode or not: • loopbackMode • noLoop
FrameScrambling	Indicates whether Frame scrambling is enabled or not.
XmitClockSource	The configured clock source. • localClk • loopback
LineType	The line type. For example, dsx1ESF or dsx1SF
Medium Type	Indicates the medium type (SONET or SDH).
Medium Time Elapsed	Indicates the number of seconds elapsed since the line is queried against.
Medium Valid Intervals	0–96

Information	Description
Medium Line Type	Indicates the medium line type. For example, multi-mode fiber (MMF) or long reach, single-mode fiber (SMF).
Number of SVC	Number of configured SVCs on the line.
Alarm Status	Indicates the current alarm status of the line: • critical • major • minor • clear • unknown • N/A **Note** The alarm status for standby cards is reported as N/A because the alarm status of the standby card may not be the same as the active card.
APS enabled	Indicates whether APS is enabled or disabled.
Channelized	Indicates whether line is channelized or not.
Num of STS-Paths/AUs	Indicates the number of STS-Path/AUs on the line.
Provisioned Paths/AUs	Indicates the number of paths and AUs provisioned on the line.
Number of ports	Number of configured ports on the line.
Number of partitions	Number of configured partitions on the line.
Number of SPVC	Number of configured SPVCs on the line.
Number of SPVP	Number of configured SPVPs on the line.

Related Commands

upln, **cnfln**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display T3 line 1 on the current AXSM.

```
MGX8850.11.AXSM.a > dspln -ds3 1.1
  Line Number         : 1.1
  Admin Status        : Down              Alarm Status        : Clear
  Line Type           : ds3cbitadm        Number of ports     : 0
  Line Coding         : ds3B3ZS           Number of partitions: 0
  Line Length(meters) : 0                 Number of SPVC      : 0
  OOFCriteria         : 3Of8Bits          Number of SPVP      : 0
  AIS c-Bits Check    : Check             Number of SVC       : 0
  Loopback            : NoLoop
  Xmt. Clock source   : localTiming
  Rcv FEAC Validation : 4 out of 5 FEAC codes
```

Display OC-48 line on the current OC-12 AXSM.

```
MGX8850.1.AXSM.a > dspln -sonet 2.1
  Line Number            : 2.1
  Admin Status           : Up                 Alarm Status        : Clear
  Loopback               : NoLoop             APS enabled         : Disable
  Frame Scrambling       : Enable             Number of ports     : 1
  Xmt Clock source       : localTiming        Number of partitions: 1
  Line Type              : sonetSts12c        Number of SPVC      : 0
  Medium Type(SONET/SDH) : SONET              Number of SVC       : 4
  Medium Time Elapsed    : 506223
  Medium Valid Intervals : 96
  Medium Line Type       : ShortSMF
```

Display DS3 line 1 on the current AXSM-E.

```
MGX8850.5.AXSME.a > dspln -ds3 1.1
  Line Number         : 1.1
  Admin Status        : Up                 Alarm Status        : Critical
  Line Type           : ds3cbitadm         Number of ports     : 1
  Line Coding         : ds3B3ZS            Number of partitions: 1
  Line Length(meters) : 0                  Number of SPVC      : 0
  OOFCriteria         : 3Of16Bits          Number of SPVP      : 0
  AIS c-Bits Check    : Check              Number of SVC       : 0
  Loopback            : NoLoop
  Xmt. Clock source   : localTiming
  Rcv FEAC Validation : 8 out of 10 FEAC codes
```

Display SONET line 1 on the current AXSM-E.

```
MGX8850.11.AXSME.a > dspln -sonet 1.1
  Line Number            : 1.1
  Admin Status           : Up                 Alarm Status        : Critical
  Loopback               : NoLoop             APS enabled         : Disable
  Frame Scrambling       : Enable             Number of ports     : 1
  Xmt Clock source       : localTiming        Number of partitions: 1
  Line Type              : sonetSts3c         Number of SPVC      : 2
  Medium Type(SONET/SDH) : SONET              Number of SPVP      : 0
  Medium Time Elapsed    : 488                Number of SVC       : 0
  Medium Valid Intervals : 96
  Medium Line Type       : Other
```

Display DS3 line 1 on the current AXSM-E.

```
MGX8850.9.AXSME.a > dspln -ds3 1.1
Line Number         : 1.1
  Admin Status        : Up                 Alarm Status        : Clear
  Line Type           : dsx1ESF            Number of ports     : 0
  Line Coding         : dsx1B8ZS           Number of partitions: 0
  Line Length(meters) : 40                 Number of SPVC      : 0
  Loopback            : NoLoop             Number of SPVP      : 0
  Xmt. Clock source   : localTiming        Number of SVC       : 0
  Valid Intervals     : 7
  Circuit Identifier  : line 1.1, slot 10, Node 222, Rack 21, SJ-3-3-1, Cisco Sys. Inc.
```

Note When APS is enabled, the alarm status line shows the alarm status of the active line.

Display SONET line on AXSM-XG.

```
M8950_DC.16.AXSMXG.a > dspln 1.1
  Line Number            : 1.1
  Admin Status           : Up                 Alarm Status        : Clear
  Loopback               : NoLoop             APS enabled         : Disable
  Frame Scrambling       : Enable             Channelized         : Yes
  Xmt Clock source       : loopTiming         Num of STS-Paths/AUs: 4
```

```
  Line Type              : Sts48c            Provisioned Paths/AUs: 1
  Medium Type(SONET/SDH) : SONET             Number of ports     : 0
  Medium Time Elapsed    : 21                Number of partitions: 0
  Medium Valid Intervals : 96                Number of SPVC      : 0
  Medium Line Type       : SSMF              Number of SPVP      : 0
  Number of SVC          : 0

M8950_DC.16.AXSMXG.a >
```

dsplnalm

Display Line Alarm—AXSM-XG

Display the line and statistical alarm state for the specified line.

Syntax

dsplnalm <*bay.line*>

Syntax Description

bay.line	Identifies the line whose statistical alarm state you want to display, in the format *bay.line*. The is either 1 or 2, the bay is 1 or 2, and the line number is from 1 to the highest numbered line on the back card. **Note** Use the **dsplns** command to see the line numbers for all lines on the current card.

Related Commands

clradjlnalmcnt, **cnflnalm**, **dspadjlnalm**, **dspadjlnalmcnt**, **dsplnalmcnf**, **dsplnalmcnt**, **dsplnalms**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

.Display line and statistical alarm state for line 1.1.

```
M8950_DC.15.AXSMXG.a > dsplnalm 1.1
Line Number             : 1.1
 Section Alarm State     : Clear
 Line Alarm State        : Clear
 Section Stat Alarm State: Clear
 Line Stat Alarm State   : Clear

M8950_DC.15.AXSMXG.a >
```

dsplnalmcnf

Display Line Alarm Configuration—AXSM-XG

Displays the current statistical line alarm thresholds on the specified line. To change the statistical line alarms thresholds, use the **cnflnalmcnf** command.

Syntax

dsplnalmcnf -<*line_type*> <*bay.line*>

Syntax Description

-<*line_type*> <*bay.line*>	Identifies the line which to you want to configure statistical line alarms thresholds. Enter the keyword (**-*line_type***) followed by the line number, in the format *bay.line*. For example: **-sonetsec** 1.1 The possible line type keywords are: • **-sonetsec** • **-sonetline** **Note** Use the **dsplns** command to see the line numbers for all lines on the current card.

Related Commands

clradjlnalmcnt, **cnflnalm**, **dspadjlnalm**, **dspadjlnalmcnt**, **dsplnalm**, **dsplnalmcnt**, **dsplnalms**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the current line alarm threshold configuration for the line 1.1.

```
mM8950_DC.15.AXSMXG.a > dsplnalmcnf -sonetsec 1.1
LineNum: 1.1
  Section Stat Alarm Severity: None
                   15min Threshold    24hr Threshold
  Section ESs  :   60                 600
  Section SESs :   3                  7
  Section SEFSs:   3                  7
  Section CVs  :   75                 750

M8950_DC.15.AXSMXG.a >
```

dsplnalmcnt

Display Line Alarm Counters—AXSM-XG

The **dsplnalmcnt** command lets you display the alarm counters for the specified line.

Syntax

dsplnalmcnt <*bay.line*>

Syntax Description

<*bay.line*>	Identifies the line whose alarm counters you want to display, in the format *bay.line*. The is bay is either 1 or 2, and the line number is from 1 to the highest numbered line on the back card. **Note** Use the **dsplns** command to see the line numbers for all lines on the current card.

Related Commands

clradjlnalmcnt, **cnflnalm**, **dspadjlnalm**, **dspadjlnalmcnf**, **dsplnalm**, **dsplnalmcnt**, **dsplnalms**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the line alarm counters for the line 1.1.

```
M8950_DC.15.AXSMXG.a > dsplnalmcnt 1.1
Line Number         : 1.1
Elapsed Time(in sec): 831
Section PM:
-----------
  Num of LOSs     : 0
  Num of LOFs     : 0
  CurrentESs      : 0
  CurrentSESs     : 0
  CurrentSEFSs    : 0
  CurrentCVs      : 0
  Current24HrESs  : 0
  Current24HrSESs : 0
  Current24HrSEFSs: 0
  Current24HrCVs  : 0
Line PM:
--------
  Num of AISs: 0
  Num of RFIs: 0
  Near End                              Far End
  CurrentESs     : 0                    CurrentESs     : 0
  CurrentSESs    : 0                    CurrentSESs    : 0
  CurrentCVs     : 0                    CurrentCVs     : 0

Type <CR> to continue, Q<CR> to stop:
```

```
  CurrentUASs    : 0                   CurrentUASs    : 0
  Current24HrESs : 0                   Current24HrESs : 0
  Current24HrSESs: 0                   Current24HrSESs: 0
  Current24HrCVs : 0                   Current24HrCVs : 0
  Current24HrUASs: 0                   Current24HrUASs: 0
M8950_DC.15.AXSMXG.a >
.
```

dsplnalms

Display Line Alarms—AXSM-XG

Displays line and statistical alarms for all lines on the current card.

Syntax

dsplnalms

Syntax Description

None.

Related Commands

clradjlnalmcnt, **clralmcnt**, **cnflnalm**, **dspadjlnalm**, **dspadjlnalmcnf**, **dsplnalm**, **dsplnalmcnt**, **dsplnalmcnt**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the line and statistical alarms for all lines on the current card.

```
M8950_DC.15.AXSMXG.a > dsplnalms

---------------------------------------------
Line Number: 1.1
Alarm State
   Section : Clear
   Line    : Clear
Statistical Alarm State
   Section : Clear
   Line    : Clear


M8950_DC.15.AXSMXG.a >
```

dsplnbucketcnt

Display Line Bucket Counters—AXSM

The **dsplnbucketcnt** command displays the current bucket values of the bucket cell counters for the given line (*bay.line*).

Bucket cell counters are collected for various types of cells during a bucket interval (15 minutes) and are stored in a statistics file that is generated at the end of each bucket interval. The statistics file is then passed to the Cisco WAN Manager (CWM) and the bucket cell counters are cleared.

The bucket counts for the following types of cells are displayed:

Note Unless ingress is specified, the bucket cell counters apply to both the ingress and egress direction.

- Received CLP0 cells
- Received CLP1 cells
- Valid OAM cells
- Invalid OAM cells
- Invalid VPI/VCI/PTI cells
- Ingress Non-zero Generic Flow Control (GFC) cells
- Ingress Last unknown Vpi
- Ingress Last unknown Vci
- Discarded HEC errors
- Corrected HEC errors
- Discarded Usage Parameter Control (UPC) cells with CLP0
- Total discarded UPC cells
- Total non-compliant UPC cells

Syntax

dsplnbucketcnt <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card. Range: For OC12: 1 For OC3: 1–4 T3, E3: 1–8

Related Commands

dsplncnt

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display the bucket cell counters for line 1 in bay 1.

```
MGX8850.9.AXSM.a > dsplnbucketcnt 1.1
                     Ingress           Egress
Rcv CLP0 Cells     : 0                  216
Rcv CLP1 Cells     : 0                  0
Valid OAM Cells    : 0                  180
Err OAM Cells      : 0                  0
VpiVciErr Cells    : 0                  0
Ing Gfc Cells          : 0
Ing LastUnknVpi        : 0
Ing LastUnknVci        : 0
Discard HecErr Cells   : 0
Corrected HecErr Cells : 0
Discard Upc CLP0 Cells : 0
Discard Upc Total Cells: 0
Total Upc NonComp Cells: 0
```

dsplncnt

Display Line Counters—AXSM, AXSM-E, AXSM-32-T1E1-E

The **dsplncnt** command displays the values of the bucket cell counters for the given bucket interval (*intvl*) on the given line (*bay.line*).

Bucket cell counters are collected for various types of cells during a bucket interval (15 minutes) and are stored in a statistics file that is generated at the end of each bucket interval. The statistics file is then passed to the Cisco WAN Manager (CWM) and the bucket cell counters are cleared.

The bucket counts for the following types of cells are displayed:

Note Unless ingress is specified, the bucket cell counters apply to both the ingress and egress direction.

- Received CLP0 cells*
- Received CLP1 cells*
- Valid OAM cells
- Invalid OAM cells
- Invalid VPI/VCI/PTI cells *
- Ingress Non-zero Generic Flow Control (GFC) cells*
- Ingress Last unknown Vpi*
- Ingress Last unknown Vci*
- Discarded HEC errors
- Corrected HEC errors
- Discarded Usage Parameter Control (UPC) cells with CLP0*
- Total discarded UPC cells*
- Total non-compliant UPC cells*

An asterisk (*) indicates that the displayed field does not apply to the AXSM-1-2488.

Syntax

dsplncnt <*bay.line*> <*intvl*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card. Range: For OC12: 1 For OC3: 1–4 T3, E3: 1–8
intvl	The time interval to display (0–96). 0 is the current 15-minute interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 is the oldest 15-minute interval.

Related Commands

clrlncnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example (AXSM)

```
MGX8850.11.AXSM.a > dsplncnt 1.1
Line Number               : 1.1
                             Ingress       Egress
 CLP0 Cells                : 0                  0
 CLP1 Cells*               : 0                  0
 Valid OAM Cells*          : 0                  0
 Err OAM Cells*            : 0                  0
 Invalid VPI/VCI/PTI Cells*: 0                  0
 Non-zero GFC Cells*       : 0
 Last Unknown VPI*         : 0
 Last Unknown VCI*         : 0
 Discard HecErr Cells      : 115
 Corrected HecErr Cells    : 0
 NOTE: Counters with '*' do NOT apply to AXSM-1-2488 (OC48)
```

Example (AXSM-E)

```
MGX8850.5.AXSME.a > dsplncnt 1.1 1
Line              : 1.1
Interval          : 1
Ingress           Egress
Rcv CLP0 Cells         : 180               180
Rcv CLP1 Cells         : 0                 0
Valid OAM Cells        : 0                 0
Err OAM Cells          : 0                 0
Rcv Valid RM Cells     : 0                 0
VpiVciErr Cells        : 0
Rcv Idle Cells         : 317903602
Ing Gfc Cells          : 0
Ing LastUnknVpi        : 0
Ing LastUnknVci        : 0
Discard HecErr Cells   : 0
Corrected HecErr Cells : 0
```

dsplnload

Display Line Load—AXSM, AXSM-E, AXSM-32-T1E1-E

The dsplnload command can help you determine the current percent of utilization and cell count on a line. Using the parameters provided by **dspln**, you can determine whether the current load on the line needs modification or troubleshooting.

Syntax

dsplnload <*bay.line*> [*intvl*]

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.
intvl	The optional time interval in seconds for which the cell rate will be displayed. The range is 1–5. The default is 1. For example, if 5 seconds is specified, the average cell rate for a 5 second interval is displayed.

Related Commands

dsplns, **dspln**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the load on line 1.1. The display shows that no cells are traversing this line.

```
MGX8850.6.AXSME.a > dsplnload 1.1
Line : 1.1
                         Ingress           Egress
Rcv CLP0 Cells         : 1000               1000
Rcv CLP1 Cells         : 0                  0
Valid OAM Cells        : 0                  0
Err OAM Cells          : 0                  0
Rcv Valid RM Cells     : 0                  0
VpiVciErr Cells        : 0
Rcv Idle Cells         : 103266
Ing Gfc Cells          : 0
Discard HecErr Cells   : 0
Corrected HecErr Cells : 0
```

dsplnpmbucketcnt

Display Line Performance Bucket Counters—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays the line specific performance monitoring interval counters.

Syntax

dsplnpmbucketcnt <*bay.line*> <*intvl*>

Syntax Description

intvl	The time interval to display (1–96).1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 being the oldest 15-minute interval.
bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card. Range: For OC12: 1 For OC3: 1–4 T3, E3: 1–8

Related Commands

dspalmcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8850.1.10.AXSME.a > dsplnpmbucketcnt 2.1 96
Line Number      : 2.1
Interval Number  : 96
Section PM:
-----------
ESs   : 1125
SESs  : 1125
SEFSs : 1125
CVs   : 43199586

Line PM:
--------
       Near End           Far End
ESs  : 1125               1125
SESs : 1125               1125
CVs  : 43199586           165598436
UASs : 1125               1125

Path PM:
--------
       Near End           Far End
```

```
ESs  : 1125               1125
SESs : 1125               1125
CVs : 14399862            0
UASs : 1125               1125
```

dsplns

Display Lines—AXSM

The **dsplns** command displays the configuration for all lines on a card. (For information on an individual line, use **dspln**.) The variations that can exist in display contents depends on the card, as follows:

- The displays for AXSM cards and the PXM1E back card (in bay 2) have nearly identical categories.
- The displays for SRMs under control of a PXM are unique to bulk mode distribution.

On an AXSM and for PXM1E uplinks, the output consists of the following:

- Bay and line number
- Line state—up (active) or down (inactive)
- The line type
- Whether any loopback currently exists on the line
- Line coding
- Frame scrambling status (enabled or disabled)
- Configured line length in meters (applies to only T3 or E3)
- Criteria for Out of Frame (OOF) error (applies to only T3 or E3)
- Whether C-bit (AIS) checking is enabled (applies to only T3 or E3)
- The medium line type—for example, long reach, single-mode fiber
- The alarm status—N/A, clear, critical, and so on

Note The alarm status for standby cards is reported as N/A because the alarm status of the standby card may not be the same as the active card.

Display Lines— AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays a list of all the configured ds3 lines on the card, along with the following attributes:

Information	Description
lineNumber	The line line number interface being displayed. For example, ds3.
AdminStatus	Indicates whether the line is up or down.
LineType	The line type. For example, dsx1ESF or dsx1SF
LineCoding	Currently not supported.
LineLength	The configured line length in meters (0–64000).
LineLoopback	Indicates whether the line is in loopback mode: • loopbackMode • noLoop
LineXmitClockSource	The configured clock source. • local clock • loop clock

Information	Description
Alarm Status	Indicates the current alarm status of the line: • critical • major • minor • clear • unknown
StatsAlarm	The alarm number of the statistics alarm.

Syntax

dsplns

Syntax Description

No parameters

Related Commands

cnfln, **delln**, **dspcds**, **dspln**, **dnln**, **upln**

Attributes

For AXSM

Log: no	State: active, standby	Privilege: ANYUSER

For AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Log: yes	State: active	Privilege: ANYUSER

Example

Display the configuration of the lines on an AXSM-4-622.

```
MGX8850.1.AXSM.a > dsplns
                                                   Medium Medium
  Sonet         Line     Line       Line    Frame  Line   Line     Alarm  APS
  Line          State    Type       Lpbk   Scramble Coding Type     State  Enabled
  ------------- ----- ------------ ------ -------- ------ -------- ------ -------
   1.1             Up   sonetSts12c NoLoop   Enable  Other ShortSMF  N/A    Enable
   1.2             Up   sonetSts12c NoLoop   Enable  Other ShortSMF  N/A    Enable
   2.1           Down   sonetSts12c NoLoop   Enable  Other ShortSMF  N/A   Disable
   2.2           Down   sonetSts12c NoLoop   Enable  Other ShortSMF  N/A   Disable
   1.1 Adj APS     Up   sonetSts12c NoLoop   Enable  Other ShortSMF  N/A    Enable
   1.2 Adj APS     Up   sonetSts12c NoLoop   Enable  Other ShortSMF  N/A    Enable
```

Display line configuration on the current AXSM-1-2488.

```
MGX8850.1.AXSM.a > dsplns
                                             Medium Medium
```

```
  Sonet  Line      Line      Line     Frame      Line   Line
  Line  Status     Type      Lpbk    Scramble    Coding Type
  ----- ----- ------------ ------  -------- -------- -------
   1.1    Down sonetSts48c NoLoop    Enable  Other ShortSingleMode
```

Display the configuration of each T3 line on the current AXSM-16-T3E3.

```
MGX8850.11.AXSM.a > dsplns
  Line  Line      Line        Line     Length  OOF      AIS        Alarm
  Num   State     Type        Lpbk    (meters) Criteria cBitsCheck State
  ---- ------- ----------- ----------- ------  -------- ---------- -----
   1.1  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.2  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.3  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.4  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.5  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.6  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.7  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   1.8  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.1  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.2  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.3  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.4  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.5  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.6  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.7  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
   2.8  Down  ds3cbitadm      NoLoop        0 3Of8Bits      Check Clear
```

```
MGX8850.2.AXSME.a > dsplns

  Line Line       Line      Line  Length   Valid   Alarm
  Num  State      Type      Lpbk  (meters) Intvls  State
  ---- ----- ----------- ------ -------- ------ --------
   1.1  Down      dsx1ESF NoLoop       40      0    Clear
   1.2  Down      dsx1ESF NoLoop       40      0    Clear
   1.3  Down      dsx1ESF NoLoop       40      0    Clear
   1.4  Down      dsx1ESF NoLoop       40      0    Clear
   1.5  Down      dsx1ESF NoLoop       40      0    Clear
   1.6  Down      dsx1ESF NoLoop       40      0    Clear
   1.7  Down      dsx1ESF NoLoop       40      0    Clear
   1.8  Down      dsx1ESF NoLoop       40      0    Clear
   1.9  Down      dsx1ESF NoLoop       40      0    Clear
  1.10  Down      dsx1ESF NoLoop       40      0    Clear
  1.11  Down      dsx1ESF NoLoop       40      0    Clear
  1.12  Down      dsx1ESF NoLoop       40      0    Clear
  1.13  Down      dsx1ESF NoLoop       40      0    Clear
  1.14  Down      dsx1ESF NoLoop       40      0    Clear
  1.15  Down      dsx1ESF NoLoop       40      0    Clear
  1.16  Down      dsx1ESF NoLoop       40      0    Clear
   2.1  Down      dsx1ESF NoLoop       40      0    Clear
   2.2  Down      dsx1ESF NoLoop       40      0    Clear
   2.3  Down      dsx1ESF NoLoop       40      0    Clear
   2.4  Down      dsx1ESF NoLoop       40      0    Clear
   2.5  Down      dsx1ESF NoLoop       40      0    Clear
   2.6  Down      dsx1ESF NoLoop       40      0    Clear
   2.7  Down      dsx1ESF NoLoop       40      0    Clear
   2.8  Down      dsx1ESF NoLoop       40      0    Clear
   2.9    Up      dsx1ESF NoLoop       40     88 Critical
  2.10    Up      dsx1ESF NoLoop       40     88 Critical
  2.11    Up      dsx1ESF NoLoop       40     88    Clear
  2.12    Up      dsx1ESF NoLoop       40     88 Critical
  2.13    Up      dsx1ESF NoLoop       40     88 Critical
  2.14    Up      dsx1ESF NoLoop       40     88 Critical
  2.15    Up      dsx1ESF NoLoop       40     88 Critical
```

```
  2.16    Up     dsx1ESF NoLoop       40     88 Critical

MGX8950.3.AXSMXG.a >dsplns
  Sonet         Line     Line      Line   Line      Alarm   APS
  Line          State    Type      Lpbk   Type      State   Enabled Channelized
  ------------- ----- ------------ ------ --------  ------- ------- ---------
   1.1             Up  sonetSts48 NoLoop  ShortSMF  Clear  Enable      Yes
   1.2           Down  sonetSts48 NoLoop  ShortSMF  Clear  Disable     No
   1.3           Down  sonetSts48 NoLoop  ShortSMF  Clear  Disable     No
   1.4           Down  sonetSts48 NoLoop  ShortSMF  Clear  Disable     No
   1.1 Adj APS     Up  sonetSts48 NoLoop  ShortSMF  Clear  Enable      Yes
```

dspload

Display Load—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Display the current level of usage of various parameters on a partition. To convey a picture of what is available on a resource partition, the display shows the configured bandwidth and connection numbers and what has actually been utilized.

Syntax

dspload <*ifNum*> <*partId*>

Syntax Description

ifNum	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
partId	The partition identifier. If necessary, use the **dspparts** command to see existing partition numbers. The ranges are: • AXSM: 1–60 • AXSM-E, AXSM-XG: 1–32

Related Commands

dsprscprtn, **addcon**, **dspcons**, **dspcon**, **cnfcon**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the load on partition number 1 on logical port 1.

```
MGX8850.1.AXSM.a > dspload 1 1
        +---------------------------------------------+
        |   I N T E R F A C E    L O A D   I N F O   |
        +---------------------------------------------+
        | Maximum Channels          : 0002000          |
        | Guaranteed Channels       : 0001000          |
        | Igr Maximum Bandwidth     : 1412830          |
        | Igr Guaranteed Bandwidth  : 0706415          |
        | Egr Maximum Bandwidth     : 1412830          |
        | Egr Guaranteed Bandwidth  : 0706415          |
        | Available Igr Channels    : 0001998          |
        | Available Egr Channels    : 0001998          |
        | Available Igr Bandwidth   : 1410377          |
        | Available Egr Bandwidth   : 1410377          |
        +---------------------------------------------+
        |          E X C E P T -- V A L U E S          |
        +---------------------------------------------+
        | SERV-CATEG | VAR-TYPE | INGRESS  | EGRESS   |
        | VSI-SIG    | Avl Chnl | 0001998  | 0001998  |
        | CBR        | Avl Chnl | 0001990  | 0001990  |
        | VBR-RT     | Avl Chnl | 0001990  | 0001990  |
        | VBR-nRT    | Avl Chnl | 0001990  | 0001990  |
        | UBR        | Avl Chnl | 0001990  | 0001990  |
        | ABR        | Avl Chnl | 0001990  | 0001990  |
        +---------------------------------------------+
        | VSI-SIG    | Avl Bw   | 1410377  | 1410377  |
        | CBR        | Avl Bw   | 1410377  | 1410377  |
        | VBR-RT     | Avl Bw   | 1410377  | 1410377  |
        | VBR-nRT    | Avl Bw   | 1410377  | 1410377  |
        | UBR        | Avl Bw   | 1410377  | 1410377  |
        | ABR        | Avl Bw   | 1410377  | 1410377  |
        +---------------------------------------------+

MGX8850.1.AXSM.a >
```

dspmcastload

Display Multicast Load–AXSM

Displays the following information about the default multicast parent connection and its leaf connections.

Maximum Bandwidth	The maximum bandwidth is fixed at OC24.
Available Bandwidth	The bandwidth that is available for operation.
Used Bandwidth	The current bandwidth used by the committed multicast leaf connections.
Maximum Lcn	The maximum number of logical channel numbers (LCNs) on the card, which is the sum of the LCNs on all partitions.
Available Lcn	The LCN that is currently available for use as the multicast parent connection. There is a single multicast parent connection for multiple leaf connections.
Used Lcn	The number of LCNs currently being used by multicast parent connections.

Syntax

dspmcastload

Syntax Description

No parameters

Related Commands

dspload

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
M8850_NY.2.AXSM.s > dspmcastload
        +--------------------------------------------+
        +-------Multicast Bandwidth Information------+
        +--------------------------------------------+
        | Maximum Bandwidth      : 02825660          |
        | Available Bandwidth    : 02825660          |
        | Used Bandwidth         : 00000000          |
        +--------------------------------------------+
        +----------Multicast Lcn Information---------+
        +--------------------------------------------+
        | Maximum Lcn            : 00127848          |
        | Available Lcn          : 00127848          |
        | Used Lcn                                   |
        |   Port Group 1         : 00000000          |
        |   Port Group 2         : 00000000          |
        |   Port Group 3         : 00000000          |
        |   Port Group 4         : 00000000          |
        +--------------------------------------------+
```

dspmempart

Display Memory Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspmempart** command to display information about memory partitions.

Syntax

dspmempart <*partition number*> <*Free Pointer Flag*>

Syntax Description

partition number	The partition number has a range that depends on the switch configuration. It could, for example, be 0-2 or 0-3.
Free Pointer Flag	You must specify whether to include free pointer flags in the display. Type a **0** for no or a **1** for yes.

Related Commands

memshow

Attributes

Log: no	State: active, standby, init	Privilege: SERVICE_GP

Example

Display memory information for partition 1 on the current AXSM.

```
M8850_LA.1.AXSM.a > dspmempart 1 1


********** Partition 1 **********

 Address    Size   Type Alloc. By     Time              Location
---------- ------- ---- ---------- ---------- -------------------------------
0x86a88000      16 FREE            FREE BLOCK
0x86a88010 5410032 FREE            FREE BLOCK
0x86fb0d00     336 HI 4 tSmtermdTa  183878655           cliGetSoftSesn+0x150
0x86fb0e50   15088 FREE tSmtermdTa FREE BLOCK           cliGetSoftSesn+0x5e8
0x86fb4940      80 HI 4 tSmCmdTsk0  367884643           cliCallXStruct+0x234
0x86fb4990      96 HI 4   tSyserrd  357325657               cliPtyOpen+0x79c
0x86fb49f0    1088 HI 4 0x00010057  183878655                cliInTask+0x1c0
0x86fb4e30      96 HI 4 0x00010057  183878655             cliPtyCreate+0xa4
0x86fb4e90    7024 HI 4   tVsiSync       7914          vsisSyncInitAll+0xd0
0x86fb6a00   28976 FREE tDbgInTask FREE BLOCK          gCliCmdInfoInit+0x41c
0x86fbdb30     112 LO 3   ilmiMain      10397         pIlmiAddrRegCnfg+0x59c
0x86fbdba0     112 LO 3   ilmiMain  364003333         pIlmiAddrRegCnfg+0x59c
0x86fbdc10     112 LO 3   ilmiMain      10327         pIlmiAddrRegCnfg+0x59c
0x86fbdc80     112 LO 3   ilmiMain  364003382         pIlmiAddrRegCnfg+0x59c
0x86fbdcf0     112 LO 4  tVsiSlave       8839    vsiCfgSetIntfPartition+0x1ac
0x86fbdd60     112 LO 4  tVsiSlave       8839    vsiCfgSetIntfPartition+0x1ac
0x86fbddd0     112 LO 4  tVsiSlave       8839    vsiCfgSetIntfPartition+0x1ac
0x86fbde40     112 LO 4  tVsiSlave       8839    vsiCfgSetIntfPartition+0x1ac
```

```
0x86fbdeb0      96 HI 4  HwMonitor  367883912      hmmAddDevToPollQueue+0x2c
0x86fbdf10     864 HI 4 tDbgInTask       7987          cliSesnUsrifGets+0x94
0x86fbe270      96 HI 4 tDbgInTask       7987                cliPtyOpen+0x79c
0x86fbe2d0    1088 HI 4 tDbgInTask       7987                 cliInTask+0x1c0
0x86fbe710      96 HI 4 tDbgInTask       7987               cliPtyCreate+0xa4

Type <CR> to continue, Q<CR> to stop:
0x86fbe770    1088 HI 4  tCccInTsk       3781               cliCccInTask+0x198
0x86fbebb0     928 HI 4 tSmtermdTa       3781                 cliRealloc+0x48
0x86fbef50     272 FREE            FREE BLOCK
0x86fbf060      96 HI 4  HwMonitor       6576      hmmAddDevToPollQueue+0x2c
0x86fbf0c0      96 HI 4   tSyserrd       3781               cliPtyCreate+0xa4
0x86fbf120      96 HI 4  tCccInTsk       3781               cliPtyCreate+0xa4
0x86fbf180     336 HI 4 tSmtermdTa       3781             cliGetSoftSesn+0x150
0x86fbf2d0      96 HI 3  tRootTask       3774                sarLcnAlloc+0x1f8
0x86fbf330      96 HI 3  tRootTask       3773                sarLcnAlloc+0x1f8
0x86fbf390      96 HI 3  tRootTask       3772                sarLcnAlloc+0x1f8
0x86fbf3f0      96 HI 3  tRootTask       3771                sarLcnAlloc+0x1f8
0x86fbf450      96 HI 3  tRootTask       3770                sarLcnAlloc+0x1f8
0x86fbf4b0      96 HI 3  tRootTask       3769                sarLcnAlloc+0x1f8
0x86fbf510      96 HI 3  tRootTask       3768                sarLcnAlloc+0x1f8
0x86fbf570      96 HI 3  tRootTask       3767                sarLcnAlloc+0x1f8
0x86fbf5d0      96 HI 3  tRootTask       3766                sarLcnAlloc+0x1f8
0x86fbf630      96 HI 3  tRootTask       3765                sarLcnAlloc+0x1f8
0x86fbf690      96 HI 3  tRootTask       3764                sarLcnAlloc+0x1f8
0x86fbf6f0      96 HI 3  tRootTask       3763                sarLcnAlloc+0x1f8
0x86fbf750      96 HI 3  tRootTask       3762                sarLcnAlloc+0x1f8
0x86fbf7b0      96 HI 3  tRootTask       3761                sarLcnAlloc+0x1f8
0x86fbf810      96 HI 3  tRootTask       3760                sarLcnAlloc+0x1f8
0x86fbf870      96 HI 3  tRootTask       3759                sarLcnAlloc+0x1f8
0x86fbf8d0      96 HI 3  tRootTask       3758                sarLcnAlloc+0x1f8
0x86fbf930      96 HI 3  tRootTask       3757                sarLcnAlloc+0x1f8

Type <CR> to continue, Q<CR> to stop:
0x86fbf990      96 HI 3  tRootTask       3756                sarLcnAlloc+0x1f8
0x86fbf9f0      96 HI 3  tRootTask       3755                sarLcnAlloc+0x1f8
0x86fbfa50      96 HI 3  tRootTask       3754                sarLcnAlloc+0x1f8
0x86fbfab0      96 HI 3  tRootTask       3753                sarLcnAlloc+0x1f8
0x86fbfb10      96 HI 3  tRootTask       3752                sarLcnAlloc+0x1f8
0x86fbfb70      96 HI 3  tRootTask       3751                sarLcnAlloc+0x1f8
0x86fbfbd0      96 HI 3  tRootTask       3750                sarLcnAlloc+0x1f8
0x86fbfc30      96 HI 3  tRootTask       3749                sarLcnAlloc+0x1f8
0x86fbfc90      96 HI 3  tRootTask       3748                sarLcnAlloc+0x1f8
0x86fbfcf0      96 HI 3  tRootTask       3747                sarLcnAlloc+0x1f8
0x86fbfd50      96 HI 3  tRootTask       3746                sarLcnAlloc+0x1f8
0x86fbfdb0      96 HI 3  tRootTask       3745                sarLcnAlloc+0x1f8
0x86fbfe10      96 HI 3  tRootTask       3744                sarLcnAlloc+0x1f8
0x86fbfe70      96 HI 3  tRootTask       3743                sarLcnAlloc+0x1f8
0x86fbfed0      96 HI 3  tRootTask       3742                sarLcnAlloc+0x1f8
0x86fbff30      96 HI 3  tRootTask       3741                sarLcnAlloc+0x1f8
0x86fbff90      96 HI 3  tRootTask       3740                sarLcnAlloc+0x1f8
0x86fbfff0      16 FREE            FREE BLOCK

                          Allocated
  Task Name     Task Id      Num    Size
------------- ----------   ----  --------
  tSmtermdTas 0x0001001b      3      1600
  tSmCmdTsk02 0x0001007c      1        80
     tSyserrd 0x0001001d      2       192
       (null) 0x00010057      2      1184
     tVsiSync 0x0001003c      1      7024
     ilmiMain 0x00010031      4       448
    tVsiSlave 0x0001003b      4       448
    HwMonitor 0x00010023      2       192
```

```
   tDbgInTask 0x00010038      4      2144
    tCccInTsk 0x0001001c      2      1184
    tRootTask 0x00000001     35      3360

Partition ID:               0x82bde310
number of free bytes:         5454400
number of alloc bytes:          17856
allocated high watermark:      275152
high priority threshold:        54722
low priority threshold:        601947
low state threshold:           722280
ok state threshold:            842660
num of Crit Pri Allocs:             0
num of High Pri Allocs:        533308
num of Low Pri Allocs:             32
num of Crit alloc fails:            0
num of High alloc fails:            0
num of Low alloc fails:             0
#ok->low/#low->ok/state:            0/0/OK
Largest Free Block Size:      5410016

M8850_LA.1.AXSM.a >
```

dspmsgq

Display Message Queue—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspmsgq** command to display different levels of detailed information about the specified message queue on the current AXSM.

Syntax

dspmsgq <*Message Queue ID*> <*Level*>

Syntax Description

Message Queue ID	Resource ID of the message queue.
Level	Extent of debugging information to be displayed: • **1** = Display summary information • **2** = Display summary information, plus table summary information • **3** = Display all debugging information, which includes the following: – Summary information – Table summary information – Detailed table summary information.

Related Commands

dspmsgqs

Attributes

Log: no	State: active, standby, init	Privilege: CISCO_GP

Example

Display summary information (level 1) about the message queue with the resource ID *0x1001e*.

```
M8850_LA.2.AXSM.a > dspmsgq 0x1001e 1

SSI_MQID             : 0x1001e
Message Queue Id     : 0x82ac8ec0
Task Queuing         : PRIORITY
Message Byte Len     : 40
Messages Max         : 16
Messages Queued      : 0
Receivers Blocked    : 0
Send timeouts        : 0
Receive timeouts     : 0


ownerTaskId          : tCccInTsk
priority             : 5
quota                : 10000
```

```
quotaProcessed      : 0
msgHandler          : 0x0
 SSI_MQID      Name           Creation Time       Task    Location
   0x1001e smMsgq01        01/01/1970 00:00:03 tCccInTsk  cliCccInTask+708

 SSI_MQID      Name        FailCount LastTask  Errno  Fmt  Type
   0x1001e smMsgq01               0

 SSI_MQID      Name          Xmtd  Recvd    QueueDelay SendDelays  AveDelay
   0x1001e smMsgq01             0      0        0 uSec      0        0 uSec

M8850_LA.2.AXSM.a >
```

dspmsgqs

Display Message Queues—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspmsgqs** command to display information about all message queues on the current AXSM.

Syntax

dspmsgqs

Syntax Description

None.

Related Commands

dspmsgq

Attributes

Log: no	State: active, standby, init	Privilege: CISCO_GP

Example

Display information about all message queues on the current AXSM.

```
M8850_LA.1.AXSM.a > dspmsgqs

    Name         SSI_MQID    MSG_Q_ID    MSG_RCVD    MSG_XMTD    MAX_MSG OWNER_T_ID
smMsgq01         0x1001e     0x82b344d0 0            0           16      tCccInTsk
dbgMsgq          0x1001f     0x82a63170 0            0           16      tDbgInTask
smMsgq02         0x1002c     0x82a27a20 0            0           16      tSmInTsk02

Free Msg Queue : 197

M8850_LA.1.AXSM.a >
```

dsppart

Display Resource Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays information about one resource partition. The displayed information is shown in the example.

Note The **dsppart** and **dsprscprtn** commands are identical. The name "dsprscprtn" is consistent with the corresponding command in Cisco MGX 8850 PXM1-based switch. You can use either command.

Note The connection count includes control VCs when you execute **dsppart** on the CLI of a service module. However, when you execute **dspcd** or **dsppnport**(**s**) on the CLI of the controller card, the display does not include control VCs.

The total number of connections in the display includes control VCs. The types of control VCs are SSCOP, PNNI-RCC, and ILMI (if ILMI is enabled). To see the connection counts that do not include control VCs, use **dsppnport**.

Syntax

dsppart <*ifNum*> <*partId*>

Syntax Description

ifNum	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
partId	The partition identifier. If necessary, use the **dspparts** command to see existing partition numbers. The range are as follows: • AXSM: 1–5 • AXSM-E, AXSM-XG: 1–20

Related Commands

addpart, **cnfpart**, **delpart**, **dspparts**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display resource partition 1 on logical port 1 of the current AXSM.

```
MGX8850.1.AXSM.a > dsppart 1 1
  Interface Number              : 1
  Partition Id                  : 1        Number of SPVC: 0
  Controller Id                 : 2        Number of SPVP: 0
  egr Guaranteed bw(.0001percent): 1000000  Number of SVC : 2
  egr Maximum bw(.0001percent)   : 1000000
  ing Guaranteed bw(.0001percent): 1000000
  ing Maximum bw(.0001percent)   : 1000000
  min vpi                       : 0
  max vpi                       : 4095
  min vci                       : 33
  max vci                       : 65535
  guaranteed connections        : 1000
  maximum connections           : 32000
```

dspparts

Display Resource Partitions—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Display information for all the resource partitions on the current card. The displayed information is shown in the example.

For information on specific elements of a resource partition, see the description of **addpart**.

Note The **dspparts** and **dsprscprtns** commands are identical. The name "dsprscprtns" is consistent with the corresponding command in Cisco MGX 8850 PXM1-based switch. You can use either command.

Syntax

dspparts

Related Commands

addpart, **delpart**, **cnfpart**, **dsppart**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display all resource partitions on the current AXSM card.

```
MGX8850.1.AXSM.a > dspparts
if   part Ctlr egr      egr      ingr     ingr     min max    min    max   min    max
Num ID    ID    GuarBw  MaxBw    GuarBw   MaxBw    vpi vpi    vci    vci   conn   conn
               (.0001%)(.0001%)(.0001%)(.0001%)
-----------------------------------------------------------------------------
 1    1     2 1000000 1000000 1000000 1000000     0 4095     33 65535    1000  32000
 2    1     2 1000000 1000000 1000000 1000000     0  255     33 65535    1000  32000
20    1     2 1000000 1000000 1000000 1000000     1    1     33 65535       2    512
21    1     2 1000000 1000000 1000000 1000000     0  255     33 65535       2    512
22    1     2 1000000 1000000 1000000 1000000     0  255     33 65535       2    512
23    1     2 1000000 1000000 1000000 1000000   255  255     33 65535       2    512
```

Display all resource partitions on the current AXSM-E card.

```
MGX8850.1.10.AXSME.a > dspparts
if   part Ctlr egr      egr      ingr     ingr     min max    min    max   min    max
Num ID    ID    GuarBw  MaxBw    GuarBw   MaxBw    vpi vpi    vci    vci   conn   conn
               (.0001%)(.0001%)(.0001%)(.0001%)
-----------------------------------------------------------------------------
 1    1    1      100     1000      100      100     1     2     32     33      10    100
```

dsppath

Display Path—AXSM-XG

Displays the following information for the specified path (*path_num*).

- Path Number (*bay.line.type*)
- Administrative Status
- Payload
- OOF Criteria
- Rcv FEAC Validation
- Path Operational State
- Number of Ports
- Number of SPVCs
- Number of SVCs

Syntax

dsppath <*path_num*>

Syntax Description

path_num	Identifies the path whose configuration information you want to display. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.

Related Commands

dsppaths

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8950.3.AXSMXG.a > dsppath  1.1.3
  Path Number           : 1.1.3          Path Type           : sts
  Admin Status          : Up             Alarm State         : Clear
  Payload               : atm            Width               : sts3c_stm1
  Path Operational State: Up             Loopback            : Local
  Number of ports       : 0              Number of partitions: 0
  Number of SPVC        : 0              Number of SPVP      : 0
  Number of SVC         : 0

MGX8950.3.AXSMXG.a > dsppath 1.4.3.1
  Path Number           : 1.4.3.1        Path Type           : ds3
  Admin Status          : Up             Alarm Status        : Clear
  PayLoad               : atm
  OOFCriteria           : 3 Out of 16    AIScBitsCheck       : Chk C-bit
  Rcv FEAC Validation   : 4 Out of 5     PLCP                : Enabled
  Path Operational State: Up             Loopback            : None
  Number of ports       : 0              Number of partitions: 0
  Number of SPVC        : 0              Number of SPVP      : 0
  Number of SVC         : 0
```

dsppaths

Display Paths—AXSM-XG

Displays the following information for all the specified paths (*path_filter*).

- Path Number (*bay.line.type*)
- Path Type
- Administrative Status
- Path Payload
- Path Width
- Path Alarm
- Operational State

Syntax

dsppaths *<path_filter>*

Syntax Description

path_filter	Designates which paths to display: • **-sts–**Display STS/AU paths. • **-ds3–**Display DS3 paths. • **-all–**Display all paths on the card. • **-alm–**Display all paths in an alarm state.

Related Commands

dsppath

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

```
MGX8950.1.AXSMXG.a > dsppaths -sts
            path     Admin     path       path      path      Oper
  path      Type     Status    Payload    Width     Alarm     State
 --------  -------  --------  ---------  --------  -------  ----------
1.1.1     sts       Up      atm     sts3c_stm1   none    clear    UP
1.1.2     sts       Down    atm     sts3c_stm1   none    clear    Down
1.1.3     sts       Up      atm     sts3c_stm1   Local   clear    Up
  .
  .
  .
1.1.16    sts       Up      atm     sts3c_stm1   none    clear   Up
1.2.1     sts       Down    atm     sts3c_stm1   none    clear   Up
  .
  .
  .
1.4.2     sts       Up      ds3     sts1_stm0    none    clear   Up
1.4.16    sts       Down    atm     sts3c_stm1   none    clear   Up

MGX8950.3.AXSMXG.a > dsppaths -ds3
         Path    Admin     Path      AIS       Path    Alarm      Oper
path     Type    Status    Payload   cBitsCheck Lpbk    State      State
------- -------- -------- --------- -------    ------- -------    ------
1.4.2.1  ds3      Up       atm       Check      none    clear      down
```

dsppathalm

Display Path Alarm—AXSM-XG

Displays the following alarm information for the specified path (*path_num*).

- Path Number
- Path Type
- Path Alarm State
- Path Stat Alarm State
- Path Operational State
- Path LOCD Alarm State

Syntax

dsppathalm <*path_num*>

Syntax Description

path_num	Identifies the path whose alarm information you want to display. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.

Related Commands

dsppathalms

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

```
MGX8950.3.AXSMXG.a > dsppathalm 1.1.1
Path Number           : 1.1.1
Path Type             : sts
Path Alarm State      : Clear
Path Stat Alarm State : Clear
Path Operational State: Up
Path LOCD alarm state : LOCD

MGX8950.3.AXSMXG.a > dsppathalm 1.1.2
Path Number           : 1.1.2
Path Type             : sts
Path Alarm State      : Clear
Path Stat Alarm State :
TotalESs,TotalSESs,TotalCVs,TotalUASs,CurrentESs,CurrentSESs,CurrentCVs,CurrentUASs
Path Operational State: Up
Path LOCD alarm state : Clear
```

dsppathalmcnf

Display Path Alarm Configuration—AXSM-XG

Displays the configured threshold settings for the statistical alarm counters for the specified path (*path_num*).

Syntax

dsppathalmcnf <*path_num*>

Syntax Description

path_num	Identifies the path whose statistical alarm counter threshold settings you want to display. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.

Related Commands

cnfpathalm

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

```
MGX8950.3.AXSMXG.a > dsppathalmcnf 1.1.1
PathNum: 1.1.1
PathType : sts
  Path Stat Alarm Severity: None
                15min Threshold    24hr Threshold
  Path ESs :    20                 200
  Path SESs:    3                  7
  Path CVs :    25                 250
  Path UASs:    10                 10

NODE.3.AXSMXG.a > dsppathalmcnf 1.4.1.1
PathNum: 1.4.1.1
PathType : ds3
  Path Stat Alarm Severity: None
                15min Threshold    24hr Threshold
  Path ESs :    20                 200
  Path SESs:    3                  7
  Path CVs :    25                 250
  Path UASs:    10                 10
```

dsppathalmcnt

Display Path Alarm Counters—AXSM-XG

Displays the path alarm counters for the specified path (*path_num*) for the current 15-minute interval and the current 24-hour interval or for a specified 15-minute interval (*intvl*).

Syntax

dsppathalmcnt <*path_num*> [<*intvl*>]

Syntax Description

path_num	Identifies the path whose alarm counters you want to display. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.
intvl	The time interval to display (0–96). 0 is the current 15-minute and 24-hour interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 being the oldest 15-minute interval.

Related Commands

clrpathalmcnt

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

MGX8950.3.AXSMXG.a > **dsppathalmcnt** 1.1.1

```
Path Number         : 1.1.1
Path Type           : sts
Elapsed Time(in sec): 586
Path PM:
--------
  Num of AISs: 0
  Num of RDIs: 0
  Near End                             Far End
  CurrentESs      : 0                  CurrentESs      : 0
  CurrentSESs     : 0                  CurrentSESs     : 0
  CurrentCVs      : 0                  CurrentCVs      : 0
  CurrentUASs     : 0                  CurrentUASs     : 0
  Current24HrESs  : 0                  Current24HrESs  : 0
  Current24HrSESs: 0                   Current24HrSESs: 0
  Current24HrCVs  : 0                  Current24HrCVs  : 0
  Current24HrUASs: 0                   Current24HrUASs: 0
```

MGX8950.3.AXSMXG.a > **dsppathalmcnt** 1.1.1 1

```
Path Number      : 1.1.1
Path Type        : sts
Interval Number  : 1
```

```
Path PM:
--------
       Near End           Far End
ESs  : 0                  0
SESs : 0                  0
tCVs : 0                  0
UASs : 0                  0

MGX8950.3.AXSMXG.a > dsppathalmcnt 1.4.1.1 1
Path Number      : 1.4.1.1
Path Type        : ds3
Interval Number  : 1
Path PM:
--------
       Near End           Far End
ESs  : 0                  0
SESs : 0                  0
tCVs : 0                  0
UASs : 0                  0
```

dsppathalms

Display Path Alarms—AXSM-XG

Displays the following alarm information for all the specified paths (*path_filter*).

- Path Number (*bay.line.type*)
- Path Type
- Path Operational State
- Path Alarm State
- Path Statistical Alarm State

Syntax

dsppathalms <*path_filter*>

Syntax Description

path_filter	Designates which paths to display: • **-sts–**Display STS/AU paths. • **-ds3–**Display DS3 paths. • **-all–**Display all paths on the card.

Related Commands

dsppathalm

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

```
MGX8950.3.AXSMXG.a > dsppathalms -sts
Path Number: 1.1.1
Path Type: sts
Path Operational State : Down
Path Alarm State: Clear
Path Statistical Alarm State: Clear


Path Number: 1.1.2
Path Type: sts
Path Operational State : Up
Path Alarm State: AIS LOCD
Path Statistical Alarm State:
TotalESs,TotalSESs,TotalCVs,TotalUASs,CurrentESs,CurrentSESs,CurrentCVs,CurrentUASs
```

dspport

Display Port—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays the configuration for a logical port. The displayed information is shown in the example. For a description of each item, see **addport**.

> **Note** The operational state for standby cards is reported as N/A because the operational state of the standby card may not be the same as the active card.

The total number of connections in the display includes control VCs. The types of control VCs are SSCOP, PNNI-RCC, and ILMI (if ILMI is enabled). To see the connection counts that do not include control VCs, use **dsppnport**.

When an AXSM-E or AXSM-XG rebuilds, it provisions the card from the stored database on the PXM disk. If the SCT file associated with a specific port is missing or corrupted, the default SCT file is applied to that port. This is indicated in the **dspport** output by the string:

"!Default SCT used!"

> **Note** The SCT ID that **dspport** shows pertains to the port. For the card-level SCT ID, use **dspcd**.

Syntax

dspport <*ifNum*>

Syntax Description

ifNum	A logical port (interface) number. Only one logical port is allowed if the line operates as a UNI or NNI. For the virtual network to network interface (VNNI), multiple ports can exist on a line. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126

Related Commands

addport, **dnport**, **dspports**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the port configuration for logical port 2 on the current AXSM.

```
Display the port configuration for logical port 2 on the current AXSM.
  MGX8850.1.AXSM.a > dspport 2
  Interface Number : 2
  Line Number : 2.1
  Admin State : Up Operational State : Up
  Guaranteed bandwidth(cells/sec): 100000 Number of partitions: 1
  Maximum bandwidth(cells/sec) : 100000 Number of SPVC : 0
  ifType : NNI Number of SVC : 4
  SCT Id : 3
  VPI number(VNNI only) : 0
```

Display the port configuration for logical port 1 on the current AXSM-E.

```
MGX8850.4.AXSME.a > dspport 12
  Interface Number               : 12
  Line Number                    : 1.2       IMA Grp Number      : N/A
  Admin State                    : Up        Operational State     : Up
  Guaranteed bandwidth(cells/sec): 353207    Number of partitions  : 1
  Maximum bandwidth(cells/sec)   : 353207    Number of SPVC        : 0
  ifType                         : NNI       Number of SPVP        : 0
  VPI number (VNNI, VUNI)        : 0         Number of SVC         : 2
  MIN VPI (EVNNI, EVUNI)         : 0         MAX VPI (EVNNI, EVUNI): 0
  SCT Id (Conf./InUse)           : 3/3
F4 to F5 Conversion            : Disabled
```

Display the port configuration for logical port 4 on the current AXSM.

```
MGX8850.13.AXSM.a > dspport 4
  Interface Number               : 4
  Line Number                    : 1.1
  Admin State                    : Up        Operational State     : Up
  Guaranteed bandwidth(cells/sec): 100000    Number of partitions  : 1
  Maximum bandwidth(cells/sec)   : 100000    Number of SPVC        : 0
  ifType                         : EVUNI     Number of SPVP        : 0
  VPI number (VNNI, VUNI)        : 0         Number of SVC         : 0
  MIN VPI (EVNNI, EVUNI)         : 29        MAX VPI (EVNNI, EVUNI): 40
  SCT Id                         : 3
  F4 to F5 Conversion            : Disabled
```

dspports

Display Ports—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays general information about all logical ports on the card. On the AXSM, the information consists of the following for each logical port:

- Logical port number (*ifNum*). On the AXSM, for example, the range is 1–60.
- Physical line number in the format *bay.port*.
- Operation status—whether the port is up or down.
- The minimum guaranteed rate in cells per second.
- The maximum allowed rate for the port in cells per second.
- The ID of the port-level SCT (see **addport**).
- The VPI number (applies only where virtual NNIs are available).

Note The operational state for standby cards is reported as N/A because the operational state of the standby card may not be the same as the active card.

Syntax

dspports

Related Commands

addport, **cnfport**, **delport**, **dspport**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the logical ports on the AXSM.

```
MGX8850.1.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum   SCT Id ifType  VPI   minVPI maxVPI
           State State Rate       Rate     (D:dflt        (VNNI, (EVNNI,EVUNI)
                                            used)          VUNI)
----- ---- ----- ----- ---------- --------- ------ ------ ------ ------ ------
    1  2.1    Up    Up    1412830   1412830   5       NNI      0      0      0
    2  2.2    Up    Up    1412830   1412830   5       NNI      0      0      0
    3  1.1    Up    Up    1412830   1412830   5       NNI      0      0      0
```

dspportbucketcnt

Display Port Bucket Counters—AXSM

The **dspportbucketcnt** command displays the current bucket values of the bucket cell counters for the given port (*ifNum*).

Bucket cell counters are collected for various types of cells during a bucket interval (15 minutes) and are stored in a statistics file that is generated at the end of each bucket interval. The statistics file is then passed to the Cisco WAN Manager (CWM) and the bucket cell counters are cleared.

The bucket counts for the following types of cells (ingress and egress) are displayed:

- Received CLP0 cells
- Received CLP1 cells
- Discarded CLP0 cells
- Discarded CLP1 cells
- Transmitted CLP0 cells
- Transmitted CLP1 cells

Syntax

dspportbucketcnt <*ifNum*>

Syntax Description

ifNum	Logical port number. The range is 1–60.

Related Commands

dspportcnt

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

Display the port bucket counters on logical port 1 of the current AXSM.

```
MGX8850.9.AXSM.a > dspportbucketcnt 1
                  Ingress            Egress
Rcv Clp0 Cells  : 0                   216
Rcv Clp1 Cells  : 0                   0
Clp0 Disc Cells : 0                   0
Clp1 Disc Cells : 0                   0
Xmt Clp0  Cells : 0                   216
Xmt Clp1  Cells : 0                   0
```

dspportcnt

Display Port Counters—AXSM-E, AXSM-32-T1E1-E, AXM-XG

Displays ATM cell counters for a logical port. Refer to the example for contents.

Syntax (AXSM)

dspportcnt <*ifNum*>

Syntax (AXSM-E, AXSM-XG)

dspportcnt <*ifNum*> <*intvl*>

Syntax Description

ifNum	Logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
intvl	(AXSM-E, AXSM-XG) The time interval to display (0–96). 0 is the current 15-minute interval. 1 is the most recent 15-minute interval. 2 is the next most recent 15-minute interval, and so on. 96 being the oldest 15-minute interval.

Related Commands

dspports, **dspport**, **cnfport**, **dspcds**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display port counters on logical port (*ifNum*) 1 of the current AXSM.

```
MGX8850.1.AXSM.a > dspportcnt 1

Cleared at      : 06/27/2001 17:43:13
Current time    : 06/27/2001 17:44:43
Elapsed time    : 0 day(s) 0:1:30 [hh:mm:ss]

                           Total            Running Avg (cps)   Peak
 --------------------------------------------------------------------
 Arrival CLP0    Ing: 0000000000000000000000           0            0
 Arrival CLP1    Ing: 0000000000000000000000           0            0
 Ar CLP0 discard Ing: 0000000000000000000000           0            0
 Ar CLP1 discard Ing: 0000000000000000000000           0            0
 Departure CLP0  Ing: 0000000000000000000000           0            0
 Departure CLP1  Ing: 0000000000000000000000           0            0

 Arrival CLP0    Egr: 0000000000000000000000           0            0
 Arrival CLP1    Egr: 0000000000000000000000           0            0
 Ar CLP0 discard Egr: 0000000000000000000000           0            0
 Ar CLP1 discard Egr: 0000000000000000000000           0            0
 Departure CLP0  Egr: 0000000000000000000000           0            0
 Departure CLP1  Egr: 0000000000000000000000           0            0
```

Display port counters on logical port (*ifNum*) 1 of the current AXSM.

```
MGX8850.1.10.AXSME.a > dspportcnt  1 1
Interface Num              : 1
Interval  Num              : 1
Egr Rcv Clp0 Cells         : 0
Egr Rcv Clp1 Cells         : 0
Egr Clp0 Disc Cells        : 0
Egr Clp1 Disc  Cells       : 0
Egr Xmt Clp0  Cells        : 0
Egr Xmt Clp1  Cells        : 0
Egr Rcv OAM  Cells         : 0
Egr Rcv RM Cells           : 0
Egr Xmt EFCI Cells         : 0
Egr Rcv EFCI Cells         : 0
Egr Xmt OAM Cells          : 0
```

Display port counters on logical port (*ifNum*) 1 of the current AXSM.

```
MGX8850.13.AXSME.a > dspportrtcnt 1
Interface Num          : 1
                         Ingress          Egress
Rcv Clp0 Cells         : 105              105
Rcv Clp1 Cells         : 0                0
Clp0 Disc Cells        : 0                0
Clp1 Disc  Cells       : 0                0
Xmt Clp0  Cells        : 105              105
Xmt Clp1  Cells        : 0                0
Rcv OAM  Cells         : 105              105
Rcv RM Cells           : 0                0
Xmt EFCI Cells         : 0                0
Rcv EFCI Cells         : 0                0
Xmt OAM Cells          : 105              105
```

dspportdbgcnf

Display Port Debug Configuration—AXSM

Display all ports on the current AXSM that have the port debugging feature enabled.

Note To enable the port debugging feature, enter the **cnfportdbg** <*ifNum*> **1** command. Replace <*ifNum*> with the number of the port on which you want to enable the debugging feature.

Syntax

dspportdbgcnf <*ifNum*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 60.

Related Commands

cnfportdbg, **clrportdbgcnt**, **dspportdbgcnt**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Display the ports on current AXSM that have the port debugging feature enabled.

```
M8850_NY.1.AXSM.a > dspportdbgcnf
The debug stats is enabled for these ports:
 11
```

dspportdbgcnt

Display Port Debug Counters—AXSM

Display all port debugging counters on the current AXSM.

Note To enable the port debugging feature, enter the **cnfportdbg** <*ifNum*> **1** command. Replace <*ifNum*> with the number of the port on which you want to enable the debugging feature.

Syntax

dspportdbgcnt <*ifNum*>

Syntax Description

ifNum	Logical interface (or port) number. The range is from 0 through 60.

Related Commands

cnfportdbg, **clrportdbgcnt**, **dspportdbgcnf**

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Display the port debugging counters for logical interface (or port) 11 on the current AXSM.

```
M8850_NY.1.AXSM.a > dspportdbgcnt 11
                             Ingress         Egress
Arrival cells     cnt[1]:          0           2531
Threshold dscd    cnt[1]:          0              0
Programmed dscd   cnt[1]:          0              0
Departure cells   cnt[1]:          0           2572

Arrival cells     cnt[2]:          0              0
Threshold dscd    cnt[2]:          0              0
Programmed dscd   cnt[2]:          0              0
Departure cells   cnt[2]:          0              0

Arrival cells     cnt[3]:          0              0
Threshold dscd    cnt[3]:          0              0
Programmed dscd   cnt[3]:          0              0
Departure cells   cnt[3]:          0              0

Arrival cells     cnt[4]:          0              0
Threshold dscd    cnt[4]:          0              0
Programmed dscd   cnt[4]:          0              0
Departure cells   cnt[4]:          0              0

Arrival cells     cnt[5]:          0              0

Type <CR> to continue, Q<CR> to stop:
```

```
Threshold dscd    cnt[5]:         0              0
Programmed dscd   cnt[5]:         0              0
Departure cells   cnt[5]:         0              0

Arrival cells     cnt[6]:         0              0
Threshold dscd    cnt[6]:         0              0
Programmed dscd   cnt[6]:         0              0
Departure cells   cnt[6]:         0              0

Arrival cells     cnt[7]:         0              0
Threshold dscd    cnt[7]:         0              0
Programmed dscd   cnt[7]:         0              0
Departure cells   cnt[7]:         0              0

Arrival cells     cnt[8]:         0              0
Threshold dscd    cnt[8]:         0              0
Programmed dscd   cnt[8]:         0              0
Departure cells   cnt[8]:         0              0

Board memory full dscd:           0              0
Port  memory full dscd:           0              0
CoS thresholds dscd:              0              0

Type <CR> to continue, Q<CR> to stop:
VC  thresholds dscd:              0              0

M8850_NY.1.AXSM.a >
```

dspportload

Display Port Load—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dspportload** command displays the current number of ingress and egress cells per second on a logical port (*ifNum*). This command can help you determine the current state of a port. Using the parameters displayed by **dspcon**, you can see if the current load on the port needs modification or troubleshooting.

Syntax

dspportload <*ifNum*> [*intvl*]

Syntax Description

ifNum	The logical interface (or port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
intvl	The optional time interval in seconds for which the cell rate will be displayed. The range is 1–5. The default is 1. For example, if 5 seconds is specified, the average cell rate for a 5 second interval is displayed.

Related Commands

dspports, **dspport**, **cnfport**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the load on logical port 1 on AXSM. In this case, no traffic currently exists on the connection.

```
MGX8850.10.AXSM.a > dspportload 1
Getting the stats. Please wait ...
                        Ingress            Egress
Cell rate (cps)       : 0                  0
```

Display the load on logical port 1 on AXSM-E.

```
MGX8850.5.AXSME.a > dspportload 1
Getting the stats. Please wait ...
                           Ingress        Egress
Cell rate (cps)          : 0               0

MGX8850.5.AXSME.a >
```

dspportsct

Display Port SCT—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Displays the contents of the service class template (SCT) on a port. See the description of the **addport** command for information on SCTs.

Note Currently, the system does not support certain parameters in the SCT, so you can specify them through **addcon**, **cnfcon**, or Cisco WAN Manager. These parameters are (when applicable) PCR, SCR, and ICR.

Syntax

dspportsct <*parameter_group*> <*ifnum*>

Syntax Description

parameter_group	An aspect of the SCT for display: • **abr** - Available bit rate parameters. (AXSM-E or AXSM-XG only) • **gen** - Policing and Connection Admission Control (CAC) parameters. • **cosb** - Class of Service Buffer parameters. • **vcThr** - Virtual Channel Threshold parameters. • **cosThr** - Class of Service Threshold parameters.
ifnum	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126

Related Commands

addport, **cnfport**, **delport**, **dspport**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Examples

Display the policing and CAC parameters (parameter “gen”) for SCT 2

To confirm that the current card-level SCT is SCT 2, use the **dspcd** command.

```
MGX8850.1.AXSM.a > dspportsct gen 2
+-----------------------------------------------------------------------------------------+
Service Class Template [2] : General Parameters
+-----------------------------------------------------------------------------------------+
| SERV-TYPE | COSB_NUM | CAC_TYPE | UPC_ENB  | CLP-SELEC |    GCRA-1    |    GCRA-2    | CI-CNTRL |
+-----------------------------------------------------------------------------------------+
| VSI-SIG   | 00000016 |    B-CAC |GCRA 1 & 2| 000000002 |      DISCARD |      DISCARD | DISABLED |
```

```
| CBR.1      | 00000003 |     B-CAC |GCRA1-ENB | 000000003 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.1   | 00000004 |     B-CAC |GCRA 1 & 2| 000000002 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.2   | 00000004 |     B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       DISCARD | DISABLED |
| VBR-RT.3   | 00000004 |     B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       SET-CLP | DISABLED |
| VBR-nRT.1  | 00000005 |     B-CAC |GCRA 1 & 2| 000000002 |       DISCARD |       DISCARD | DISABLED |
| VBR-nRT.2  | 00000005 |     B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       DISCARD | DISABLED |
| VBR-nRT.3  | 00000005 |     B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       SET-CLP | DISABLED |
| UBR.1      | 00000006 |   LCN_CAC |GCRA1-ENB | 000000003 |       DISCARD |       DISCARD | DISABLED |
| UBR.2      | 00000006 |   LCN_CAC |GCRA1-ENB | 000000003 | DSCD/SET-CLP |       DISCARD | DISABLED |
| ABR        | 00000001 |     B-CAC |GCRA1-ENB | 000000003 |       DISCARD |       DISCARD | ENABLED  |
| CBR.2      | 00000003 |     B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       DISCARD | DISABLED |
| CBR.3      | 00000003 |     B-CAC |GCRA 1 & 2| 000000001 |       DISCARD |       SET-CLP | DISABLED |
+--------------------------------------------------------------------------------------------------+
```

Display the Class of Service Buffer parameters for SCT 2

Min-Rate and Max-Rate do not apply in the current product.

Excess-Priority is a scheme for distributing excess bandwidth. The lowest number is the highest priority for a connection to receive excess bandwidth. If two or more connections have equal priority, the excess bandwidth is equally distributed between them.

Explicit Rate Stamping (ERS) applies to only ABR connections.

Cell loss ratio (CLR) is currently hard-coded, so do not attempt tot modify it through the Cisco WAN Manager application or the CLI commands.

```
MGX8850.1.AXSM.a > dspportsct cosb 2
+------------------------------------------------------------------------------------+
|Service Class Template [02] : COSB Parameters

+------------------------------------------------------------------------------------+
| COSB | MIN-RATE | MAX-RATE | MIN-PRIORITY | EXCESS-PRIORITY | ERS ENABLE |   CLR    |
+------------------------------------------------------------------------------------+
| 0001 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0002 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0003 | 00000000 | 00000100 |          000 |             000 |    DISABLE | 10^-10 |
| 0004 | 00000000 | 00000100 |          000 |             001 |    DISABLE | 10^-08 |
| 0005 | 00000000 | 00000100 |          000 |             001 |    DISABLE | 10^-06 |
| 0006 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0007 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0008 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0009 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0010 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0011 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0012 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0013 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0014 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0015 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0016 | 00000000 | 00000100 |          000 |             000 |    DISABLE | 10^-06 |
+------------------------------------------------------------------------------------+
```

Display VC thresholds for SCT 2

The Scaling COSB value applies to congestion in a Class of Service Buffer: if a particular buffer becomes congested, this scaling factor determines the how quickly the rate at which cells enter the buffer is throttled back (until the buffer is no longer congested, at which time normal rates resume).

The Scaling Log-If is a scaling factor that applies to congestion on an entire port: when the whole port is congested, this factor determines the rate at which traffic is throttled back (until the port is no longer congested, at which time normal rates resume).

```
MGX8850.1.AXSM.a > dspportsct vcThr 2
+--------------------------------------------------------------------------------------------------------+
Service Class Template [2] : VC Threshold Parameters
```

```
+-----------------------------------------------------------------------------------------------------------+
| SERV-TYPE  | VC THRESH | PACKET |  MAX_CELL  |   EFCI  | CLP_HI  |   EPD0  | CLP_LO  | SCALING | SCALING |
|            | TBL IDX   |  MODE  |   THRESH   |         |         |         |  EPD1   |  COSB   |  Log-If |
+-----------------------------------------------------------------------------------------------------------+
| VSI-SIG    |     002   |   DSB  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| CBR.1      |     003   |   DSB  | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| VBR-RT.1   |     004   |   DSB  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-RT.2   |     005   |   DSB  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-RT.3   |     006   |   DSB  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.1  |     007   |   DSB  | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.2  |     008   |   DSB  | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.3  |     009   |   DSB  | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| UBR.1      |     010   |   DSB  | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| UBR.2      |     011   |   DSB  | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| ABR        |     012   |   DSB  | 0000050000 | 0200000 | 0800000 | 0600000 | 0800000 | 0000003 | 0000003 |
| CBR.2      |     013   |   DSB  | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| CBR.3      |     014   |   DSB  | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001
+-----------------------------------------------------------------------------------------------------------+
```

Display the Class of Service Thresholds for SCT 2

```
MGX8850.1.AXSM.a > dspportsct cosThr 2
+----------------------------------------------------------------------------------------------+
Service Class Template [00002] : COSB Threshold Parameters
+----------------------------------------------------------------------------------------------+
| COSB |COSB THRESH|  MAX_CELL   |   EFCI   | CLP_HI   |   EPD0   | CLP_LO   |    RED | RED PROB  |
|      | TBL IDX   |   THRESH    |          |          |          |  EPD1    | |  FACTOR   |
+----------------------------------------------------------------------------------------------+
| 0001 |  0000002  |  1000000    | 0200000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0002 |  0000003  |  1000000    | 0200000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0003 |  0000004  |     5000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0004 |  0000005  |    10000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0005 |  0000006  |    50000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0006 |  0000007  |   100000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0007 |  0000008  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0008 |  0000009  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0009 |  0000010  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0010 |  0000011  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0011 |  0000012  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0012 |  0000013  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0013 |  0000014  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0014 |  0000015  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0015 |  0000016  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0016 |  0000017  |    10000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
+----------------------------------------------------------------------------------------------+
```

Display the general parameters for SCT 3

```
MGX8850.9.AXSM.a > dspportsct gen 3
+--------------------------------------------------------------------------------------------------+
Service Class Template [3] : General Parameters
+--------------------------------------------------------------------------------------------------+
| SERV-TYPE | COSB_NUM | CAC_TYPE | UPC_ENB   | CLP-SELEC |    GCRA-1     |    GCRA-2    | CI-CNTRL |
+--------------------------------------------------------------------------------------------------+
| VSI-SIG   | 00000016 |    B-CAC |DISABLED   | 000000002 |       DISCARD |      DISCARD | DISABLED |
| CBR.1     | 00000003 |    B-CAC |DISABLED   | 000000003 |       DISCARD |      DISCARD | DISABLED |
| VBR-RT.1  | 00000004 |    B-CAC |DISABLED   | 000000002 |       DISCARD |      DISCARD | DISABLED |
| VBR-RT.2  | 00000004 |    B-CAC |DISABLED   | 000000001 |       DISCARD |      DISCARD | DISABLED |
| VBR-RT.3  | 00000004 |    B-CAC |DISABLED   | 000000001 |       DISCARD |      SET-CLP | DISABLED |
| VBR-nRT.1 | 00000005 |    B-CAC |DISABLED   | 000000002 |       DISCARD |      DISCARD | DISABLED |
| VBR-nRT.2 | 00000005 |    B-CAC |DISABLED   | 000000001 |       DISCARD |      DISCARD | DISABLED |
| VBR-nRT.3 | 00000005 |    B-CAC |DISABLED   | 000000001 |       DISCARD |      SET-CLP | DISABLED |
| UBR.1     | 00000006 |  LCN_CAC |DISABLED   | 000000003 |       DISCARD |      DISCARD | DISABLED |
| UBR.2     | 00000006 |  LCN_CAC |DISABLED   | 000000003 | DSCD/SET-CLP |      DISCARD | DISABLED |
```

```
| ABR        | 00000001 |     B-CAC |DISABLED   | 000000003 |       DISCARD |       DISCARD | ENABLED  |
| CBR.2      | 00000003 |     B-CAC |DISABLED   | 000000001 |       DISCARD |       DISCARD | DISABLED |
| CBR.3      | 00000003 |     B-CAC |DISABLED   | 000000001 |       DISCARD |       SET-CLP | DISABLED |
+---------------------------------------------------------------------------------------------------+
```

Display the Class of Service Buffer parameters for SCT 3

Min-Rate and Max-Rate do not apply in the current product.

Excess-Priority is a scheme for distributing excess bandwidth. The lowest number is the highest priority for a connection to receive excess bandwidth. If two or more connections have equal priority, the excess bandwidth is equally distributed between them.

Explicit Rate Stamping (ERS) applies to only ABR connections.

Cell loss ratio (CLR) is currently hard-coded, so do not attempt tot modify it through the Cisco WAN Manager application or the CLI commands.

```
MGX8850.9.AXSM.a > dspportsct cosb 3
+------------------------------------------------------------------------------------+
|Service Class Template [03] : COSB Parameters
+------------------------------------------------------------------------------------+
| COSB | MIN-RATE | MAX-RATE | MIN-PRIORITY | EXCESS-PRIORITY | ERS ENABLE |   CLR    |
+------------------------------------------------------------------------------------+
| 0001 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0002 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0003 | 00000000 | 00000100 |          000 |             000 |    DISABLE | 10^-10 |
| 0004 | 00000000 | 00000100 |          000 |             001 |    DISABLE | 10^-08 |
| 0005 | 00000000 | 00000100 |          000 |             001 |    DISABLE | 10^-06 |
| 0006 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0007 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0008 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0009 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0010 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0011 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0012 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0013 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0014 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0015 | 00000000 | 00000100 |          000 |             002 |    DISABLE | 10^-06 |
| 0016 | 00000000 | 00000100 |          000 |             000 |    DISABLE | 10^-06 |
+------------------------------------------------------------------------------------+
```

Display VC thresholds for SCT 3

The Scaling COSB value applies to congestion in a Class of Service Buffer: if a particular buffer becomes congested, this scaling factor determines the how quickly the rate at which cells enter the buffer is throttled back (until the buffer is no longer congested, at which time normal rates resume).

The Scaling Log-If is a scaling factor that applies to congestion on an entire port: when the whole port is congested, this factor determines the rate at which traffic is throttled back (until the port is no longer congested, at which time normal rates resume).

```
MGX8850.9.AXSM.a > dspportsct vcThr 3
+-------------------------------------------------------------------------------------------------------------+
Service Class Template [3] : VC Threshold Parameters
+-------------------------------------------------------------------------------------------------------------+
| SERV-TYPE | VC THRESH | PACKET |  MAX_CELL  |   EFCI  | CLP_HI  |   EPD0  | CLP_LO  | SCALING | SCALING |
|           | TBL IDX   |  MODE  |   THRESH   |         |         |         |  EPD1   |  COSB   |  Log-If |
+-------------------------------------------------------------------------------------------------------------+
| VSI-SIG   |     034   |   DSB  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| CBR.1     |     035   |   DSB  | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| VBR-RT.1  |     036   |   DSB  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-RT.2  |     037   |   DSB  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-RT.3  |     038   |   DSB  | 0000005000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.1 |     039   |   DSB  | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
```

```
| VBR-nRT.2 |     040    |    DSB   | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| VBR-nRT.3 |     041    |    DSB   | 0000025000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000002 | 0000002 |
| UBR.1     |     042    |    DSB   | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| UBR.2     |     043    |    DSB   | 0000050000 | 1000000 | 0800000 | 0600000 | 0800000 | 0000004 | 0000004 |
| ABR       |     044    |    DSB   | 0000050000 | 0200000 | 0800000 | 0600000 | 0800000 | 0000003 | 0000003 |
| CBR.2     |     045    |    DSB   | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
| CBR.3     |     046    |    DSB   | 0000002500 | 1000000 | 0800000 | 0600000 | 0800000 | 0000001 | 0000001 |
+-----------------------------------------------------------------------------------------------------------+
```

Display the Class of Service thresholds for SCT 3

```
MGX8850.9.AXSM.a > dspportsct cosThr 3
+-----------------------------------------------------------------------------------------------+
Service Class Template [00003] : COSB Threshold Parameters
+-----------------------------------------------------------------------------------------------+
| COSB |COSB THRESH|  MAX_CELL   |  EFCI    | CLP_HI   |  EPD0    | CLP_LO   |   RED | RED PROB  |
|      | TBL IDX   |   THRESH    |          |          |          |  EPD1    | FACTOR |
+-----------------------------------------------------------------------------------------------+
| 0001 |  0000018  |  1000000    | 0200000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0002 |  0000019  |  1000000    | 0200000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0003 |  0000020  |     5000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0004 |  0000021  |    10000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0005 |  0000022  |    50000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0006 |  0000023  |   100000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0007 |  0000024  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0008 |  0000025  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0009 |  0000026  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0010 |  0000027  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0011 |  0000028  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0012 |  0000029  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0013 |  0000030  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0014 |  0000031  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0015 |  0000032  |  1000000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
| 0016 |  0000033  |    10000    | 1000000 | 0800000 | 0600000 | 0800000 | 1000000 | 000000015 |
+-----------------------------------------------------------------------------------------------+
MGX8850.6.AXSME.a > dspportsct cosb 3
+---------------------------------------------------------------+
|Service Class Template [03] : COSB Parameters                  |
+---------------------------------------------------------------+
|COSB| MIN-RATE| MAX-RATE| EXCESS | CELL DISC |    ERS     |CLR|
|NUM |         |         |PRIORITY| ALARM     |            |   |
+---------------------------------------------------------------+
|  1 |       0 | 1000000 |      1 | DISABLED  | DISABLED   |  6|
|  2 |       6 | 1000000 |      1 | DISABLED  | DISABLED   |  6|
|  3 |       6 | 1000000 |      1 | DISABLED  | DISABLED   |  6|
|  4 |       6 |     100 |      1 | DISABLED  | DISABLED   |  6|
|  5 |       0 |  100000 |      0 | DISABLED  | DISABLED   |  6|
|  6 |       0 |  100000 |      1 | DISABLED  | DISABLED   |  6|
|  7 |       6 |  100000 |      1 | DISABLED  | DISABLED   |  6|
|  8 |       0 |  100000 |      0 | DISABLED  | DISABLED   |  6|
|  9 |       6 |     100 |      1 | DISABLED  | DISABLED   |  6|
| 10 |       0 | 1000000 |      0 | DISABLED  | DISABLED   |  6|
| 11 |       1 | 1000000 |      1 | DISABLED  | DISABLED   |  6|
| 12 |       0 | 1000000 |      1 | DISABLED  | DISABLED   |  6|
| 13 |       0 |  100000 |      2 | DISABLED  | DISABLED   |  6|
| 14 |       0 |  100000 |      2 | DISABLED  | DISABLED   |  6|
| 15 |       6 | 1000000 |      1 | DISABLED  | DISABLED   |  6|
| 16 |       6 | 1000000 |      1 | DISABLED  | DISABLED   |  6|
+--------------------------------------------------------------+
```

Display the Class of Service Buffer parameters for SCT 3 on an AXSM-XG service module

```
Cupertino.13.AXSMXG.a > dspportsct cosb 28
+-----------------------------------------------------------------------+
| Service Class Template [113] : COSB Parameters |
```

```
| Major Version [ 1] : Minor Version [ 2] |
+-------------------------------------------------------------------------+
|COSB| MIN-RATE| MAX-RATE| MIN     | EXCESS  | RSD  | ERS       |CLR| WFQ_ENB|
|NUM |         |         |PRIORITY|PRIORITY|      |           |   |        |
+-------------------------------------------------------------------------+
| 1  | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 | ENABLED|
| 2  | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 3  | 0       | 100     | 0       |      0 | 1    | DISABLED | 10|DISABLED|
| 4  | 0       | 100     | 0       |      1 | 1    | DISABLED | 8 |DISABLED|
| 5  | 0       | 100     | 0       |      1 | 1    | DISABLED | 6 |DISABLED|
| 6  | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 7  | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 8  | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 9  | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 10 | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 11 | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 | ENABLED|
| 12 | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 13 | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 14 | 0       | 100     | 0       |      3 | 1    | DISABLED | 6 |DISABLED|
| 15 | 0       | 100     | 0       |      2 | 1    | DISABLED | 6 |DISABLED|
| 16 | 0       | 100     | 0       |      0 | 1    | DISABLED | 6 |DISABLED|
+-------------------------------------------------------------------------+

Cupertino.13.AXSMXG.a >
```

dspprf

Display Profiler—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspprf** command to launch a facility called the profiler. It collects and displays statistics from resource usage. The resources include:

- Message queue
- Memory usage
- Memory chunks

Additionally, the **dspprfhist** command displays CPU usage.

Caution The profiler is a facility intended for developers at Cisco Systems. Because of the possibly large CPU overhead involved with the profiler, using **dspprf** on an overloaded switch can have unpredictable and unacceptable consequences. For example, it could overwhelm a marginally functioning switch. For this reason, you should contact the TAC before using dspprf and never run it for exploratory or experimental reasons. For a safer look at system resources, use the Resource Monitoring commands (**cnfrmrsrc**, **dsprmalms**, **dsprmrsrc**, **dsprmrsrcs**, and **dsprminfo**) or the **dspprfhist** command.

Syntax

dspprf <*type*> <*category*>

Syntax Description

type	This parameter determines the display option. For total display, type a **t**. For an interval display, type an **i**.
category	This parameter determines which resource to display. • **m**: Type an "m" for task-based memory usage. "Task" is also known as "process" in some other contexts, but they are interchangeable in this environment because the OS is not multi-threaded. • **n**: Memory chunk. • **q**: Message queue profiler information. • **r**: System services interface SSI memory information.

Related Commands

dspprfhist, **cnfrmrsrc**, **dsprmalms**, **dsprmrsrc**, **dsprmrsrcs**, **dsprminfo**

Attributes

Log: no	State: active, standby, init	Privilege: SERVICE_GP

Example

Display the total task-based memory usage statistics from resource usage on the current AXSM.

```
M8850_LA.1.AXSM.a > dspprf t m
                       Blk       Size     MaxBlk      MaxSz
UNKOWN                   0          0          0          0
tRootTask               45   22675616         45   22675616
tSarDisp                 0          0          0          0
tLOGD                    0          0          0          0
ctc                      3       9040          3       9040
SRCV                     0          0          0          0
tExcTask                 0          0          0          0
tLogTask                 0          0          0          0
tDbgTrc                  0          0          0          0
tWdbTask                 0          0          0          0
tNetTask                 0          0          0          0
tSl0Wrt                  0          0          0          0
tPortmapd                0          0          0          0
IPC Ctl                  0          0          0          0
tSyncRamDb               1      13024          3      13664
CliCcRoot                0          0          0          0
tSmtermdTas              4       1680          8      47264
tCccInTsk                2       1184          2       1184
tSyserrd                 2        192          3        288
tCliIOtimer              0          0          0          0
tCccCmdTsk               0          0          0          0
tCccOutTsk               0          0          0          0

Type <CR> to continue, Q<CR> to stop:
dbClnt                  61      25136         61      25136
FileAccSrv               0          0          1       8256
HwMonitor               12       2432         13       2528
rmonTask                 0          0          0          0
StatFileMgr             84       7040         84       7040
emRoot                  23    7755728         23    7755728
CCMA_Task                0          0          0          0
ilmiRat                  1        176          1        176
snmpAxsmRat              1        128          1        128
lmiRootTask              1    1024064          3    1027408
TrapRat                  1        144          2        224
CutRat                   1        240          2        320
CliRat                   1        176          2        256
diagOnln                 0          0          0          0
tCrdmpSlv                0          0          0          0
tEvtHndlrTa              0          0          1         80
ilmiMain                17     519952         56     524352
trapClTask               2      28160          7      30464
cutSTask                 4        448          5        624
snmpSA                 153      15824        160      87920
ilmiPassup               0          0          0          0
camTask                  0          0          1         80
ilmiSync                 0          0          0          0

Type <CR> to continue, Q<CR> to stop:
tDbgInTask               4       2144          5      32112
cutW1Task                8       1024         22      74336
QE48SARTask              0          0          0          0
tVsiSlave               50   18822544         88   19079488
tVsiSync                 0          0          2       2208
tCproAlm                 0          0          0          0
tCpro                    7      89824          8      98016
tConStat                 0          0          3      33152
```

```
tOamAr                  6    5281152          6    5281152
tOamCc                  3      49344          3      49344
tOamLb                  0          0          0          0
tTelnetDTas             0          0          0          0
cutW2Task               0          0          1         80
cutW3Task               0          0          1         80
cutVTask                0          0          1         80
lmiSyncRamT             0          0          0          0
lmiIpConnTa             0          0          0          0
EMTask                  3        288          3        288
tEmFaultMgr             3        368          3        368
PhyTask                 0          0          0          0
tEmRamSync              0          0          0          0
APSTask                 2       7696          2       7696
APS1P0                  2       7696          2       7696

Type <CR> to continue, Q<CR> to stop:
APS1P1                  2       7696          2       7696
APS1P2                  2       7696          2       7696
APS1P3                  2       7696          2       7696
StatsTask               0          0          0          0
tSnmpSaReg              0          0          0          0
sctReader               0          0          0          0
sctReader               0          0          0          0
cProStask               0          0          0          0
tSmInTsk02              2       1184          3       1504
tSmCmdTsk02            -1       -320         82       7984
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02            -1       -320          0          0
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02            -1       -320          0          0
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02            -1       -320          0          0
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02             1        -64         44       4416
tSmOutTsk02             0          0          0          0

Type <CR> to continue, Q<CR> to stop:
tSmInTsk02              0          0          1        320
tSmCmdTsk02            -1       -320          1         80
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02             0       -176         23       2352
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02            -1       -320          1        128
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02            -1       -320         18       1792
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02             3        -64         22       2048
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02            -1       -320         18       1792
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          1        320
tSmCmdTsk02             0       -192         18       1792
tSmOutTsk02             0          0          0          0
tSmInTsk02              0          0          0          0
```

```
tSmCmdTsk02              3        192          3        192

Type <CR> to continue, Q<CR> to stop:
tSmOutTsk02              0          0          0          0
                  BlkAssgn    AssgnSz    BlkFree     FreeSz       Fail
UNKOWN                   0          0          0          0          0
tRootTask                0          0          0          0          0
tSarDisp                 0          0          0          0          0
tLOGD                    0          0          0          0          0
ctc                      0          0          0          0          0
SRCV                     0          0          0          0          0
tExcTask                 0          0          0          0          0
tLogTask                 0          0          0          0          0
tDbgTrc                  0          0          0          0          0
tWdbTask                 0          0          0          0          0
tNetTask                 0          0          0          0          0
tSl0Wrt                  0          0          0          0          0
tPortmapd                0
         0          0          0          0
IPC Ctl                  0          0          0          0          0
tSyncRamDb               0          0         18       5760          0
CliCcRoot                0          0          0          0          0
tSmtermdTas             19      11200         73     648704          0
tCccInTsk                0          0          0          0          0
tSyserrd                 0          0          3        288          0
tCliIOtimer              0          0          0          0          0
tCccCmdTsk               0          0          0          0          0

Type <CR> to continue, Q<CR> to stop:
tCccOutTsk               0          0          0          0          0
dbClnt                   0          0          0          0          0
FileAccSrv               0          0       4034   33304704          0
HwMonitor                0          0     455693   43746528          0
rmonTask                 0          0          0          0          0
StatFileMgr              0          0          0          0          0
emRoot                   0          0          4       2816          0
CCMA_Task                0          0          0          0          0
ilmiRat                  0          0          0          0          0
snmpAxsmRat              0          0          0          0          0
lmiRootTask              0          0         16       6384          0
TrapRat                  1         80          0          0          0
CutRat                  45       3600          0          0          0
CliRat                   1         80          0          0          0
diagOnln
         0          0          0          0          0
tCrdmpSlv                0          0          0          0          0
tEvtHndlrTa              0          0          1         80          0
ilmiMain         185766750 -2072907632  185766771 -2072903392          0
trapClTask               0          0      11042    4298400          0
cutSTask             10931    1159872      11967    1341056          0
snmpSA              253457  101742736     266954  105725920          0
ilmiPassup               0          0          0          0          0
camTask                  0          0          1         80          0

Type <CR> to continue, Q<CR> to stop: ilmiSync              0         0         0
0          0
tDbgInTask               0          0          2      32208          0
cutW1Task          1743250  201524432    1772596  468463152          0
QE48SARTask              0          0          0          0          0
tVsiSlave                0          0       1480    9770352          0
tVsiSync                 0          0         40      44160          0
tCproAlm                 0          0          0          0          0
tCpro                    0          0          2      10192          0
tConStat                 0          0      16360  152606080          0
```

```
tOamAr                0          0          0          0          0
tOamCc                0          0          0          0          0
tOamLb                0          0          0          0          0
tTelnetDTas           0          0          0          0          0
cutW2Task             0          0          9        720          0
cutW3Task             0          0          9        720          0
cutVTask              0          0          9        720          0
lmiSyncRamT           0          0          0          0          0
lmiIpConnTa           0          0          0          0          0
EMTask                0          0          0          0          0
tEmFaultMgr           0          0          2        480          0
PhyTask               0          0          0          0          0
tEmRamSync            0          0          0          0          0
APSTask               0          0          0          0          0

Type <CR> to continue, Q<CR> to stop: APS1P0                0         0         0
0          0
APS1P1                0          0          0          0          0
APS1P2                0          0          0          0          0
APS1P3                0          0          0          0          0
StatsTask             0          0          0          0          0
tSnmpSaReg            0          0          0          0          0
sctReader             0          0          0          0          0
sctReader             0          0          0          0          0
cProStask             0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02          49       5952        248      25072          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02           1        320          0          0          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02           1        320          0          0          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02           1        320          0          0          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02         263      30848        448      48864          0

Type <CR> to continue, Q<CR> to stop:
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02           1        320          1         80          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02         428      53120        818      90736          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02           1        320         42       4704          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02          61       7360         80       8976          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02         182      21504        279      31168          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02          61       7360         78       8816          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          1        320          0
tSmCmdTsk02          60       7232         80       8992          0
tSmOutTsk02           0          0          0          0          0
tSmInTsk02            0          0          0          0          0
```

```
Type <CR> to continue, Q<CR> to stop:
tSmCmdTsk02             2        128          9        688          0
tSmOutTsk02             0          0          0          0          0

M8850_LA.1.AXSM.a >
```

dspprfhist

Display Profiler History—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspprfhist** command to display CPU usage. The information consists of a percent of CPU time used by individual tasks. The information appears in “buckets” (see Example). You can specify the maximum number of “CPU utilization information” buckets that are displayed. Each bucket reflects the overall CPU utilization of the tasks in a five-second polling interval.

Note This command applies primarily to internal Cisco developers.

Syntax

dspprfhist [*buckets*]

Syntax Description

buckets	Optional number of buckets to display. If you do not specify the number of buckets, the command displays a maximum of 10 buckets. Range: 1-120 Default: 10

Related Commands

dspprf, cnfrmrsrc, dsprmalms, dsprmrsrc, dsprmrsrcs, dsprminfo

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the CPU usage history for the current AXSM.

Note The total percent of CPU usage does not necessarily equal 100 because only the three busiest tasks are displayed.

```
M8850_LA.1.AXSM.a > dspprfhist
CURRENT TIME         09:39:01
Sample #     0
09:31:47(From)-09:36:47(To)
TASK                 TaskId           %
---------------------------------------
INTERRUPT            -           0.0000
KERNEL               -           0.0000
IDLE                 -          98.0000
UNKOWN               -           0.0000
tCliIOtimer          30          0.0000
```

```
QE48SARTask          58           0.0000
tCpro                62           0.0000
tConStat             63           0.0000
tOamAr               64           0.0000
StatsTask            82           0.0000

Sample #    -1
09:26:47(From)-09:31:47(To)
TASK                 TaskId            %
---------------------------------------
INTERRUPT            -            0.0000
KERNEL               -            0.0000
IDLE                 -           98.0000

Type <CR> to continue, Q<CR> to stop:
UNKOWN               -            0.0000
tCliIOtimer          30           0.0000
QE48SARTask          58           0.0000
tCpro                62           0.0000
tConStat             63           0.0000
StatsTask            82           0.0000

Sample #    -2
09:21:47(From)-09:26:47(To)
TASK                 TaskId            %
---------------------------------------
INTERRUPT            -            0.0000
KERNEL               -            0.0000
IDLE                 -           98.0000
UNKOWN               -            0.0000
QE48SARTask          58           0.0000
tConStat             63           0.0000
tEmRamSync           76           0.0000
StatsTask            82           0.0000

Sample #    -3
09:16:47(From)-09:21:47(To)
TASK                 TaskId            %

Type <CR> to continue, Q<CR> to stop:
---------------------------------------
INTERRUPT            -            0.0000
KERNEL               -            0.0000
IDLE                 -           98.0000
UNKOWN               -            0.0000
tCliIOtimer          30           0.0000
QE48SARTask          58           0.0000
tConStat             63           0.0000
tOamAr               64           0.0000
StatsTask            82           0.0000

Sample #    -4
09:11:47(From)-09:16:47(To)
TASK                 TaskId            %
---------------------------------------
INTERRUPT            -            0.0000
KERNEL               -            0.0000
IDLE                 -           98.0000
UNKOWN               -            0.0000
QE48SARTask          58           0.0000
tCpro                62           0.0000
tConStat             63           0.0000
tEmRamSync           76           0.0000
```

```
Type <CR> to continue, Q<CR> to stop:
StatsTask            82          0.0000

Sample #    -5
09:06:47(From)-09:11:47(To)
TASK                 TaskId           %
---------------------------------------
INTERRUPT            -           0.0000
KERNEL               -           0.0000
IDLE                 -          98.0000
UNKOWN               -           0.0000
QE48SARTask          58          0.0000
tConStat             63          0.0000
tEmRamSync           76          0.0000
StatsTask            82          0.0000

Sample #    -6
09:01:47(From)-09:06:47(To)
TASK                 TaskId           %
---------------------------------------
INTERRUPT            -           0.0000
KERNEL               -           0.0000
IDLE                 -          98.0000
UNKOWN               -           0.0000

Type <CR> to continue, Q<CR> to stop:
tCliIOtimer          30          0.0000
QE48SARTask          58          0.0000
tCpro                62          0.0000
tConStat             63          0.0000
StatsTask            82          0.0000

Sample #    -7
08:56:47(From)-09:01:47(To)
TASK                 TaskId           %
---------------------------------------
INTERRUPT            -           0.0000
KERNEL               -           0.0000
IDLE                 -          98.0000
UNKOWN               -           0.0000
tCliIOtimer          30          0.0000
QE48SARTask          58          0.0000
tCpro                62          0.0000
tConStat             63          0.0000
tEmRamSync           76          0.0000
StatsTask            82          0.0000

Sample #    -8
08:51:47(From)-08:56:47(To)

Type <CR> to continue, Q<CR> to stop:
TASK                 TaskId           %
---------------------------------------
INTERRUPT            -           0.0000
KERNEL               -           0.0000
IDLE                 -          98.0000
UNKOWN               -           0.0000
camTask              54          0.0000
QE48SARTask          58          0.0000
tCpro                62          0.0000
tConStat             63          0.0000
StatsTask            82          0.0000

Sample #    -9
```

```
08:46:47(From)-08:51:47(To)
TASK                 TaskId           %
---------------------------------------
INTERRUPT            -           0.0000
KERNEL               -           0.0000
IDLE                 -          98.0000
UNKOWN               -           0.0000
tCliIOtimer          30          0.0000
lmiRootTask          42          0.0000
QE48SARTask          58          0.0000

Type <CR> to continue, Q<CR> to stop:
tConStat             63          0.0000
StatsTask            82          0.0000


M8850_LA.1.AXSM.a >
```

dspqecnfcnt

Display QE Configuration Count—AXSM-E, AXSM-32-T1E1-E

This command displays the programmed cell rates in the AXSM-E and AXSM-XG Queuing Engine (QE) for the specified logical port (*ifNum*) in the specified *direction*. This command displays the current global cell count of the QE, the input and output VI count, and the Qbin levels.

The Qbin is a Class of Service Buffer (CoSB) that supports Quality of Service (QoS). The VI is the service group virtual interface (port).

This command is a traffic management debugging tool that allows you to compare the programmed cell rates with the actual cell count at any given time.

Syntax

dspqecnfcnt <*direction*> <*ifNum*>

Syntax Description

direction	The direction of the cells. 1: Ingress 2: Egress
ifNum	The virtual interface number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126

Related Commands

dspconhwcnf

Attributes

Log: no	State: active	Privilege: ANYUSER

Example

```
MGX8850.4.AXSME.a > dspqecnfcnt 2 11

Displaying Thresholds configured in  EGRESS QE for ifNum#  11
-----------------------------------------------------------------
Global Cell Count : 0
Input  VI   Count : 0
Output VI   Count : 0

QBIN#        QBIN Min. Cell Rate        QBIN Curr. Cell Count
-----------------------------------------------------------------
 1                7                             0
 2              150                             0
 3                7                             0
 4              100                             0
```

```
 5              7                              0
 6              7                              0
 7              7                              0
 8              7                              0
 9              7                              0
10              7                              0
11              7                              0
12              7                              0
13              7                              0
14              7                              0
15              7                              0
16              7                              0

                             Global Scaling Factor RAM
Class
 0     8 4 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 1     b 9 7 5 4 3 2 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 2     f d b 9 8 7 6 5 4 4 3 3 2 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 3     f d b 9 8 7 6 5 4 4 3 3 2 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

                              VI Scaling Factor RAM
Class
 0     8 4 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 1     b 9 7 5 4 3 2 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 2     f d b 9 8 7 6 5 4 4 3 3 2 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 3     f d b 9 8 7 6 5 4 4 3 3 2 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

dsprmalms

Display Resource Monitor Alarms—AXSM, AXSM-E, AXSM-XG

Displays the type and number of alarms for the resources that are being monitored on the card. It also displays the resource name, resource ID number, and the total number of alarms.

Syntax

dsprmalms

Syntax Description

No Parameters

Related Commands

dsprmrsrcs, dsprmrsrc, cnfrmrsrc

Attributes

Log: no	State: active, standby	Privilege: CISCO_GP

Example

```
MGX8850.8.AXSM.a > dsprmalms
=================[Resource Monitoring Alarm ]=======================
ID    Name                Critical:     Major:      Minor:
---------------------------------------------------------------------
0     SSI Static Memory                  0           1            0
1     SSI dynamic Memory                 0           0            1
2     SSI snmp Memory                    0           0            0
3     SSI IPC Small Buffer               0           0            0
4     SSI IPC Medium Buffer              0           0            0
5     SSI IPC Large Buffer               0           0            0
6     SSI IPC Huge Buffer                0           0            0
7     SSI IPC mblk Buffer                0           0            0
8     Hard Disk Space - C:               0           1            0
9     Hard Disk Space - D:               0           0            0
10    Hard Disk Space - E:               0           0            0
11    Hard Disk Space - F:               0           0            0
12    CPU Peak Utilization               0           0            0
13    System Memory                      0           0            0
14    SSI Timer                          0           0            0
15    SSI File Descriptor                0           0            0
16    VxWorks File Descriptor            0           0            0
---------------------------------------------------------------------
TOTAL:    Critical: 0      Major: 2       Minor:1
```

dsprminfo

Display Resource Monitor Information—AXSM, AXSM-E, AXSM-XG

Displays the task control information and statistics for the resources that are being monitored on the card.

Syntax

dsprminfo

Syntax Description

No Parameters

Related Commands

dsprmrsrcs, dsprmrsrc, cnfrmrsrc

Attributes

Log: no	State: active, standby	Privilege: CISCO_GP

Example

```
MGX8850.8.AXSM.a > dsprminfo
============[Task Info]==================
numOfRsrcs   : 17         Attempt       : 0
actInterval  : 1          maxTrapResend : 10
trapInterval : 30         alarmCriCnt   : 0
alarmMajCnt  : 2          alarmMinCnt   : 1

============[statistics]==================
pollTotalCnt             : 153870     pollFailCnt                : 0
pollOkCnt                : 153870     pollNumFuncCnt             : 0
pollOk2LowCnt            : 2          pollOk2MedCnt              : 2
pollMed2LowCnt           : 0          pollLow2OkCnt              : 0
pollMed2OkCnt            : 1          pollTimerTimeoutcnt        : 153915
pollTimeoutRsrcNullCnt   : 0          pollTimerSucceedScheduleCnt: 153915
pollTimerFailScheduleCnt: 0           pollTimerUnexpectedCnt     : 0

alarmUpdateTotalCnt      : 5          alarmUpdateSucceedCnt      : 5
alarmUpdateFailCnt       : 0
trapTimerTimeoutCnt      : 45         trapTimerUnexpected        : 0
trapTimerSuccScheduleCnt: 47          trapTimerFailScheduleCnt   : 0
actSucceedCnt            : 209830     actFailCnt                 : 0
actTimerTimeoutCnt       : 209898     actTimerUnexpectedCnt      : 0
actTimerOkScheduleCnt    : 209898     actTimerFailScheduleCnt    : 0
unknownTimerCnt          : 0          comEpWaitBreak             : 0

MGX8850.8.AXSM.a >
```

dsprmrsrc

Display Resource Monitor Resource—AXSM, AXSM-E, AXSM-XG

Displays detailed information about a specific OS resource that is being monitored on the card. You specify which resource you want information about by providing the resource ID number (*rsrcId*). You can get the resource ID number using the **dsprmrsrcs** command.

Syntax

dsprmrsrc <*rsrcId*>

Syntax Description

rsrcId	The resource ID number that specifies the OS resource to display information about. Use the **dsprmrsrcs** command to get resource ID numbers. Range 0–16.

Related Commands

dsprmrsrcs, dsprminfo, cnfrmrsrc, cnfrmrsrc

Attributes

Log: no	State: active, standby	Privilege: CISCO_GP

Example

```
MGX8850.8.AXSM.a > dsprmrsrc 0
==================[Resource Infomation]================
name    : SSI Static Memory     state    : LOW
Maximum size            : 48857088              Cur size : 1465936(Byte)
ignoreMed               : NO                    LowWaterMark : 1465616
Threshold Type          : value                 poll interval: 30
Low threshold value     : 2931360    Medium threshold value: 3175640
 High threshold value    : 3419920    Low threshold percent : 60
Medium threshold percent: 70         High threshold percent: 80


===================[Action Info]==================
            Send                 Alarm
            Trap             Critical Major  Minor
-------------------------------------------------
Low Action: yes            no        yes       no
Med Action: yes            no        no        yes
Ok Action : yes            no        yes       no


===================[Statistics]===================
total poll: 6985         failed poll: 0
ok to low : 1            ok to med  : 1
med to low: 0            low to ok  : 0
med to ok : 1
```

```
==================[Others]==================
Largest Free Size: 1461360      Hi piority alloc : 2560
Low piority alloc: 806          alloc fail: 0

MGX8850.8.AXSM.a >
```

dsprmrsrcs

Display Resource Monitor Resources—AXSM, AXSM-E, AXSM-XG

Displays brief information about the OS resources that are currently being monitored on the card. Information such as the resource ID number and the resource name are provided. The resource ID number can be used to get detailed information about a specific OS resource using the **dsprmrsrc** command.

Syntax

dsprmrsrcs

Syntax Description

No Parameters

Related Commands

dsprmrsrc, dsprminfo, cnfrmrsrc, cnfrmrsrc

Attributes

Log: no	State: active, standby	Privilege: CISCO_GP

Example

```
MGX8850.8.AXSM.a > dsprmrsrcs
Id   Name                     Max       Unit    State    Size               Thresh              Enable
                              Size                                 Low       Med       High
=============================================================================================
0    SSI Static Memory        48857088  Byte    LOW      1465616   2931360   3175640   3419920   ON
1    SSI dynamic Memory       9306112   Byte    MED      1158544   1116720   1209780   1302840   ON
2    SSI snmp Memory          4653056   Byte    OK       3884608   279120    302380    325640    ON
3    SSI IPC Small Buffer     6000      Buf     OK       5992      1800      1950      2100      ON
4    SSI IPC Medium Buffer    2000      Buf     OK       2000      600       650       700       ON
5    SSI IPC Large Buffer     600       Buf     OK       600       180       195       210       ON
6    SSI IPC Huge Buffer      125       Buf     OK       125       37        40        43        ON
7    SSI IPC mblk Buffer      9225      Buf     OK       9217      1106      1198      1290      ON
8    Hard Disk Space - C:     800       MByte   LOW      25        80        120       160       ON
9    Hard Disk Space - D:     600       MByte   OK       421       30        42        60        ON
10   Hard Disk Space - E:     100       MByte   OK       80        5         7         10        ON
11   Hard Disk Space - F:     1000      MByte   OK       997       100       150       200       ON
12   CPU Peak Utilization     1000      %       OK       970       50        70        100       ON
13   System Memory            10998016  Byte    OK       5892000   1099801   1319761   1649702   ON
14   SSI Timer                1000      /       OK       942       50        60        80        ON
15   SSI File Descriptor      4160      /       OK       4058      208       249       332       ON
16   VxWorks File Descriptor  500       /       OK       375       25        32        40        ON
```

dsprscprtn

Display Resource Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dsprscprtn** command to display information about a resource partition. The displayed information is shown in the example.

> **Note** The **dsppart** and **dsprscprtn** commands are identical. The name ‘dsprscprtn' is consistent with the corresponding command in Release 1 of the MGX 8850 switch. You can use either command.

The total number of connections in the display includes control VCs. The types of control VCs are SSCOP, PNNI-RCC, and ILMI (if ILMI is enabled). To see the connection counts that do not include control VCs, use **dsppnport**.

Syntax

dsprscprtn <*ifNum*> <*partId*>

Syntax Description

ifNum	Logical interface (port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
partId	Partition identifier, in the range from 1 through 5.

Related Commands

addrscprtn, cnfrscprtn, delrscprtn, dsprscprtns

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the configuration for partition 1 on logical port 11.

```
M8850_LA.1.AXSM.a > dsprscprtn 11 1
  Interface Number               : 11
  Partition Id                   : 1        Number of SPVC: 0
  Controller Id                  : 2        Number of SPVP: 0
  egr Guaranteed bw(.0001percent): 1000     Number of SVC : 2
  egr Maximum bw(.0001percent)   : 10000
  ing Guaranteed bw(.0001percent): 1000
  ing Maximum bw(.0001percent)   : 10000
  min vpi                        : 100
  max vpi                        : 200
  min vci                        : 35
```

```
  max vci                         : 65535
  guaranteed connections          : 1
  maximum connections             : 10

M8850_LA.1.AXSM.a >
```

dsprscprtns

Display Resource Partitions—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dsprscprtns** command to display information for all the resource partitions on the current card. The displayed information appears the example.

For information on specific elements of a resource partition, see the description of addrscprtn.

Note The **dspparts** and **dsprscprtns** commands are identical. The name ‘dsprscprtn’ is consistent with the corresponding command in Release 1 of the MGX 8850 switch. You can use either command.

Syntax

dsprscprtns

Syntax Description

None.

Related Commands

addrscprtn, delrscprtn, cnfrscprtn, dsprscprtn

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display all resource partitions.

```
M8850_LA.1.AXSM.a > dsprscprtns
if  part Ctlr egr      egr      ingr     ingr     min max   min   max  min   max
Num ID   ID   GuarBw  MaxBw    GuarBw  MaxBw    vpi vpi   vci   vci  conn  conn
             (.0001%)(.0001%)(.0001%)(.0001%)
-----------------------------------------------------------------------------
11   1    2    1000   10000    1000   10000  100  200    35 65535     1     10
11   2    5  500000  500000  500000  500000    0   10    32 65535  1000   4000
21   1    2  500000  500000  500000  500000   11 4095    35 65535   100   4000
21   2    5  500000  500000  500000  500000    0   10    32 65535  1000   4000

M8850_LA.1.AXSM.a >
```

dspsarcnt

Display SAR Counters—AXSM, AXSM-E, AXSM-XG

Displays the Segmentation and Reassembly (SAR) for the current AXSM.

Syntax

dspsarcnt

Syntax Description

None.

Related Commands

clrsarcnt

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display SAR counters for the current AXSM.

```
M8850_NY.1.AXSM.a > dspsarcnt

                <IPC SAR General Info>

                ===================

  SAR Version                  :   0        (0x0)

  SAR Status                   :   52        (0x34)

  SAR Current State            :   RUN
  SAR Previous State           :   STANDBY
  SAR Cell Format              :     STI

               <IPC SAR General Counters>

               =======================

  Rcv Cell Cnt on Unknown LCN  :   0                 (0x0)

  Last Unknown LCN             :   0                 (0x0)

  ACI Xmt FIFO Full Cnt        :   0                 (0x0)

  Data Xmt Cell Cnt            :   219418            (0x3591a)


Type <CR> to continue, Q<CR> to stop:
  Data Rcv Cell Cnt            :   132504            (0x20598)
```

```
  Mgm Xmt Frame Cnt            :   64548            (0xfc24)

  Mgm Rcv Frame Cnt            :   64627            (0xfc73)

  Mgm Rcv Buffer Overflow      :   0                (0x0)

  RC_BOC Error                 :   0                (0x0)

  Rcv Fifo full cell drop cnt  :   0                (0x0)

  Rcv LCN Out of Range         :   0                (0x0)

  EDMA Rx Completion Full Cnt  :   0                (0x0)

  EDMA Tx Completion Full Cnt  :   0                (0x0)

  # TxCell Compl Entries       :   0                (0x0)

  # Received over size frames  :   0                (0x0)


Type <CR> to continue, Q<CR> to stop:
  # Received frames with len err:   0                (0x0)

  # Received frames with CRC err:   0                (0x0)




               <Non-IPC SAR General Counters>

               ===========================
Cells Sent OK 0
Cells Sent Direct to HW 0
Cells Sent to SW Ring 0
Cells Sent to SW Ring that were Discarded 0
Cells Recd. OK 0
Cells Recd. OK that were Posted 0
Cells Recd. OK that were Discarded 0
Frames Requested to be Sent 8367
Frames Sent OK 8367
Frame Descriptors Recd. 8031
Unchained Frame Descriptors Recd. 8031

Type <CR> to continue, Q<CR> to stop:
Frames Recd. OK that were Posted  8031
```

dspsct

Display Service Class Template—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspsct** command to display the contents of a port or card level service class template (SCT). For more information on SCTs, see the description of SCTs in the switch software configuration guide.

With the **dspsct** command, you can display:

- Port or Card SCTs
- A particular SCT template
- A section within the SCT (see Syntax Description for an explanation)

Note Currently, the system does not support certain parameters in the service class templates (SCTs), so you can specify them through **addcon**, **cnfcon**, or Cisco WAN Manager. These parameters are (when applicable) PCR, SCR, and ICR.

Syntax

dspsct <*abr* | *gen* | *cosb* | *vcThr* | *cosThr*> <*sctID*> <*port* | *card*>

Syntax Description

gen **cosb** **vcThr** **cosThr**	A specific part of the SCT, as follows: • **gen**: general VC • **cosb**: class of service buffer • **vcThr**: VC thresholds • **cosThr**: COSB thresholds
sctID	SCT identifier in the range 1-255.
port | *card*	Specifies the part of the card where the template applies. Enter port or card.

Related Commands

cnfcdsct, **dspcdsct**, **dspportsct**, **dspsct**, **setsctver**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the general VC part of the card SCT file number 5.

```
M8850_LA.1.AXSM.a > dspsct gen 5 card

+------------------------------------+
| MINOR - VERSION |  MAJOR - VERSION |
| 000000000000001 | 000000000000001  |
+------------------------------------+
+------------------------------------------------------------------------------------------
--------+
Service Class Template [5] : General Parameters
+------------------------------------------------------------------------------------------
--------+
| SERV-TYPE | COSB_NUM | CAC_TYPE | UPC_ENB  | CLP-SELEC |    GCRA-1    |    GCRA-2    |
CI-CNTRL |
+------------------------------------------------------------------------------------------
--------+
| VSI-SIG   | 00000016 |    B-CAC |DISABLED  | 000000002 |      DISCARD |      DISCARD |
DISABLED |
| CBR.1     | 00000003 |    B-CAC |DISABLED  | 000000003 |      DISCARD |      DISCARD |
DISABLED |
| VBR-RT.1  | 00000004 |    B-CAC |DISABLED  | 000000002 |      DISCARD |      DISCARD |
DISABLED |
| VBR-RT.2  | 00000004 |    B-CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
| VBR-RT.3  | 00000004 |    B-CAC |DISABLED  | 000000001 |      DISCARD |      SET-CLP |
DISABLED |
| VBR-nRT.1 | 00000005 |    B-CAC |DISABLED  | 000000002 |      DISCARD |      DISCARD |
DISABLED |
| VBR-nRT.2 | 00000005 |    B-CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
| VBR-nRT.3 | 00000005 |    B-CAC |DISABLED  | 000000001 |      DISCARD |      SET-CLP |
DISABLED |
| UBR.1     | 00000006 |  LCN_CAC |DISABLED  | 000000003 |      DISCARD |      DISCARD |
DISABLED |
| UBR.2     | 00000006 |  LCN_CAC |DISABLED  | 000000003 | DSCD/SET-CLP |      DISCARD |
DISABLED |
| ABR       | 00000001 |    B-CAC |DISABLED  | 000000003 |      DISCARD |      DISCARD |
DISABLED |
| CBR.2     | 00000003 |    B-CAC |DISABLED  | 000000003 |      DISCARD |      DISCARD |
DISABLED |
| CBR.3     | 00000003 |    B-CAC |DISABLED  | 000000001 |      DISCARD |      SET-CLP |
DISABLED |
| TagCOS-0c | 00000007 |  LCN_CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
| TagCOS-1c | 00000008 |  LCN_CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
| TagCOS-2c | 00000009 |  LCN_CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
| TagCOS-3c | 00000010 |  LCN_CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |

Type <CR> to continue, Q<CR> to stop:
| TagCOS-4c | 00000007 |  LCN_CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
| TagCOS-5c | 00000008 |  LCN_CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
| TagCOS-6c | 00000009 |  LCN_CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
| TagCOS-7c | 00000010 |  LCN_CAC |DISABLED  | 000000001 |      DISCARD |      DISCARD |
DISABLED |
```

```
+---------------------------------------------------------------------------------------------
--------+

M8850_LA.1.AXSM.a >
```

dspsegment

Display Segment—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspsegment** command to display a specific segment in a connection.

Syntax

dspsegment [*segment***] [***detl***]**

Syntax Description

segment	Starting segment number of the segment you want to display. **Note** Enter the **dspsegments** command to see the segment numbers for all segments on the current card.

Related Commands

,**dspsegments**, **tstconseg**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the segment with the starting segment number *00*.

```
M8850_LA.1.AXSM.a > dspsegment 00

*********CONNECTIONS IN SEGMENT# 00***********

Rcd: 0000 ifNum: 05, vpi: 0100, vci: 0100

Rcd: 0001 ifNum: 01, vpi: 2048, vci: 1000

Total valid conns. in segment : 0002

M8850_LA.1.AXSM.a >
```

dspsegments

Display Segments—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspsegments** command to display all segments associated with the current AXSM.

Syntax

dspsegments

Syntax Description

segment	Starting segment number of the segment you want to display.
detl	Enter **1** to Enable detl, or **2**to disable detl.

Related Commands

dspsegment, **tstconseg**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display all segments associated with the current AXSM.

```
M8850_LA.1.AXSM.a > dspsegments

*********ALLOCATIONS BY SEGMENT***********
Cumulative connection count : 0000

M8850_LA.1.AXSM.a >
```

dspsem

Display Semaphore—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspsem** command to display information about a specified semaphore.

Syntax

dspsem <*Semaphore ID*> <*Level*>

Syntax Description

Semaphore ID	Identifies the semaphore you want to display.
Level	Enables core or detailed information for the specified semaphore. Enter a number to indicate the level of debugging for the channel as follows: • **1**—coreStats • **2**—detailedStats Enter a **0** to disable the debugging feature on the specified channel.

Related Commands

dspsems

Attributes

Log: no	State: active/standby/init	Privilege: CISCO_GP

Example

Display core information about the semaphore with the ID *0x10067*.

```
M8850_LA.2.AXSM.a > dspsem 0x10067 1

SSI_SEMID           : 0x10067
Semaphore Id        : 0x829bd2b0
Semaphore Type      : COUNTING
Task Queuing        : FIFO
Pended Tasks        : 0
Count               : 5

initState           : 0
recv action         : NO_ACTION
recv function       : 0x0
number recursive    : 0
 SSI_SEMID     Name           Creation Time       Task     Location
   0x10067 cProConnDb      05/11/2004 16:30:42 tCpro      sr_proto_loc_reg+220

 SSI_SEMID     Name        Last Take Task  Location
   0x10067 cProConnDb        tCpro         sr_dbtable_dec_window+120

 SSI_SEMID     Name         Taken   AveHoldTime  AveDelayTime
```

```
   0x10067 cProConnDb          11 1513366507 uSec        1 uSec

M8850_LA.2.AXSM.a >
```

dspsems

Display Semaphores—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspsems** command to display all semaphores on the current AXSM.

Syntax

dspsems

Syntax Description

None.

Related Commands

dspsem

Attributes

Log: no	State: active/standby/init	Privilege: CISCO_GP

Example

Display all semaphores on the current AXSM.

```
M8850_LA.1.AXSM.a > dspsems
'    NAME           TYPE     SSI_SEMID    SEM_ID      LAST_TAKE_TASK
semChunkLib        MUTEX    0x10008  0x82b743f0      APSTask
semChnk_0x00010    MUTEX    0x10009  0x82b743c0      lmiRootTas
SSIDIO_FD_TABLE    MUTEX    0x1000a  0x82b742d0      tCpro
                   MUTEX    0x1000b  0x82b741e0      tCpro
                   MUTEX    0x1000c  0x82b741b0      tCpro
                   MUTEX    0x1000d  0x82b74180      tCpro
                  BINARY    0x1000e  0x82b74150      0xffffffff
                  BINARY    0x1000f  0x82b74120      0xffffffff
                  BINARY    0x10010  0x82b740f0      0xffffffff
                  BINARY    0x10011  0x82b740c0      0xffffffff
                  BINARY    0x10012  0x82b74090      0xffffffff
                  BINARY    0x10013  0x82b74060      0xffffffff
                  BINARY    0x10014  0x82b74030      0xffffffff
                  BINARY    0x10015  0x82b74000      0xffffffff
                  BINARY    0x10016  0x82b73fd0      0xffffffff
                  BINARY    0x10017  0x82b73fa0      0xffffffff
                   MUTEX    0x10018  0x82b73f70      0xffffffff
CTC_CSM_LOCK       MUTEX    0x10019  0x82b49fa0      lmiRootTas
cntpSem_0000000   BINARY    0x1001a  0x82b39510      tSmCmdTsk0
SYNCRAM_DB_TBL     MUTEX    0x1001b  0x82b6a0f0      tSmCmdTsk0
FNKEY_TBL_SEM      MUTEX    0x1001c  0x82b6a0c0      tEmRamSync
RCHKEY_TBL_SEM     MUTEX    0x1001d  0x82b6a090      tEmRamSync
SYNCRAM_SM_LOCK    MUTEX    0x1001e  0x82b6a060      tSyncRamDb
dbClntWorkers      MUTEX    0x1001f  0x82b696d0      0xffffffff
fasLocalFdTblSe    MUTEX    0x10020  0x82b20250      tSmCmdTsk0
EmCcmaInitSafeS   BINARY    0x10021  0x82aed950      CCMA_Task
QE48 driver        MUTEX    0x10022  0x82aed8c0      QE48SARTas
```

```
lmiExclSem          MUTEX     0x10023  0x82ad8050      lmiRootTas
lmiRingCongSem     BINARY     0x10024  0x82ad8020      0xffffffff
                    MUTEX     0x10025  0x82ad7bf0      StatFileMg
crdmpSlvHotDump     MUTEX     0x10026  0x82acf420      0xffffffff
crdmpSlvConfigC     MUTEX     0x10027  0x82acf3f0      0xffffffff
CUTS_CB_semid      BINARY     0x10028  0x82ac6f30      0xffffffff
CUTS_WCB_semid     BINARY     0x10029  0x82ac6f00      cutVTask
CUTW_FILE_ONE      BINARY     0x1002a  0x82ac6ed0      cutSTask
CUTW_FILE_TWO      BINARY     0x1002b  0x82ac6ea0      snmpSA
CUTW_FILE_THREE    BINARY     0x1002c  0x82ac6e70      snmpSA
CUTW_FILE_FOUR     BINARY     0x1002d  0x82ac6e40      cutVTask
CUTW_FILE_FIVE     BINARY     0x1002e  0x82ac6e10      cutSTask
CUTW_FILE_SIX      BINARY     0x1002f  0x82ac6de0      snmpSA
SALock             BINARY     0x10030  0x82ac6d50      snmpSA
SAIoSemaphore      BINARY     0x10031  0x82ac6d20      snmpSA
CUT_MIB_semid      BINARY     0x10032  0x82ac6cf0      cutSTask
singleThrMibFun     MUTEX     0x10033  0x82ac6c90         0x1007c
SM_ENT_semid        MUTEX     0x10034  0x82ac6c60      0xffffffff
ILMI_RAM_DB1     COUNTING     0x10035  0x82aba3d0      0xffffffff
ILMI_RAM_DB1       BINARY     0x10036  0x82aba3a0      0xffffffff
udpMutex0           MUTEX     0x10037  0x82ab1f50      StatsTask
Humvee driver       MUTEX     0x10038  0x82ab1ef0      HwMonitor
mutex0             BINARY     0x10039  0x82ab1e90      StatsTask
mutex1             BINARY     0x1003a  0x82ab1e30      StatsTask
mutex2             BINARY     0x1003b  0x82ab1dd0      StatsTask
mutex3             BINARY     0x1003c  0x82ab1d70      StatsTask
dalQeCosbSem        MUTEX     0x1003d  0x82ab1d10      QE48SARTas
cliUserPassword    BINARY     0x1003e  0x82bdec90      0xffffffff
QE48SARLTSem        MUTEX     0x1003f  0x82bdec30      QE48SARTas
QE48SARCESem        MUTEX     0x10040  0x82bdec00      QE48SARTas
QE48SARCISem        MUTEX     0x10041  0x82bdebd0      QE48SARTas
QE48SARASCNSm      BINARY     0x10042  0x82bdeba0      0xffffffff
QE48SARFRAMESDS    BINARY     0x10043  0x82bdeb70      ilmiMain
QE48SARTxSem0       MUTEX     0x10044  0x82bdeb40      QE48SARTas
QE48SARTxSem1       MUTEX     0x10045  0x82bdeb10      QE48SARTas
cmDbgSem            MUTEX     0x10046  0x82bde9b0      CCMA_Task
VsiSync            BINARY     0x10047  0x82bde980      tVsiSlave
VSISSctRamDb1    COUNTING     0x10048  0x82a97150      0xffffffff
VSISSctRamDb1      BINARY     0x10049  0x82a97120      0xffffffff
VSISGenRamDb1    COUNTING     0x1004a  0x82a970c0      tVsiSync
VSISGenRamDb1      BINARY     0x1004b  0x82a97090      tVsiSync
VSISConnRamDb1   COUNTING     0x1004c  0x82a97030      tVsiSync
VSISConnRamDb1     BINARY     0x1004d  0x82a97000      tVsiSync
VSISVerRamDb1    COUNTING     0x1004e  0x82a96fa0      0xffffffff
VSISVerRamDb1      BINARY     0x1004f  0x82a96f70      0xffffffff
Vsis                MUTEX     0x10050  0x82a7dc50      tVsiSlave
tVSiSlaveCongSe    BINARY     0x10051  0x82a7dc20      0xffffffff
oamExclSem          MUTEX     0x10052  0x82a79880      0xffffffff
cProRcdAcc          MUTEX     0x10053  0x82a79760      tCpro
cProAvlExclSem      MUTEX     0x10054  0x82a79730      tCpro
cProWrAccSem        MUTEX     0x10055  0x82a79700      0xffffffff
cProExclSem         MUTEX     0x10056  0x82a796d0      0xffffffff
cProRingCongSem    BINARY     0x10057  0x82a796a0      0xffffffff
cstatMutex          MUTEX     0x1005a  0x82a6c820      tConStat
lmiSem              MUTEX     0x1005b  0x82a6c700      lmiSyncRam
lmiSem              MUTEX     0x1005c  0x82a6c6d0      0xffffffff
lmiRamDb         COUNTING     0x1005d  0x82a64080      lmiSyncRam
lmiRamDb           BINARY     0x1005e  0x82a64050      0xffffffff
lmiSpcRamDb      COUNTING     0x1005f  0x82a63ff0      0xffffffff
lmiSpcRamDb        BINARY     0x10060  0x82a63fc0      0xffffffff
cProConnDb       COUNTING     0x10061  0x82a63110      tCpro
cProConnDb         BINARY     0x10062  0x82a630e0      tCpro
cProTransaction     MUTEX     0x10063  0x82a63080      cutSTask
EmCtcLineDriver     MUTEX     0x10064  0x82a63050      0xffffffff
```

```
phyLineDriverSe    MUTEX    0x10065  0x82a56810      0xffffffff
EM_RAM_DATABASE COUNTING    0x10066  0x82a38dc0      tEmRamSync
EM_RAM_DATABASE   BINARY    0x10067  0x82a38d90      tEmRamSync
statEmBillingSa    MUTEX    0x10068  0x82a38cd0      StatsTask

Free semaphores : 405

M8850_LA.1.AXSM.a >
```

dspspvcif

Display SPVC Interface—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspspvcif** command to display SPVC address information for a specific interface (port) that supports an SPVC.

Syntax

dspspvcif <*ifNum*>

Syntax Description

ifNum	The logical port number, in the range from1 through 60

Related Commands

dspspvcifs

Attributes

Log: no	State: active/standby	Privilege: ANYUSER

Example

Display the SPVC address information for interface 11.

```
M8850_LA.1.AXSM.a > dspspvcif 11
Tree is empty for ifNum = 11
```

dspspvcifs

Display SPVC Interfaces—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspspvcifs** command to display SPVC address information about all interfaces (ports) on the current AXSM.

Syntax

dspspvcifs [**-start** <intf>] [**-ctlr** <*controller*>] [**-detl** <**1** | **0**>]

Syntax Description

.

-start <intf>	Identifies the starting segment in a list of consecutive segments to be displayed. Enter the **-start** keyword, followed by the number that identifies the starting segment. The display will show all consecutive segments, beginning with the segment number you specify here. **Note** Enter the **dspspvcifs** command without any of the optional parameters to see the interface numbers for all SPVCs on the current AXSM.
-ctlr <*controller*>	Identifies the network controller associated with the interface (port) whose address information you want to display. Enter the **-ctlr** keyword, followed by the controller ID. **Note** Enter the **dspspvcifs** command without any of the optional parameters to see the controller IDs for all SPVCs on the current AXSM card.
-detl <**1** | **0**>	Enables or disables detl on the specified port. Enter the **-detl** keyword, followed by **1** to enable detl, or **0** to disable detl.

Related Commands

dspspvcif

Attributes

Log: no	State: active/standby	Privilege: CISCO_GP

Example

Display SPVC address information about all interfaces (ports) on the current AXSM.

```
M8850_LA.1.AXSM.a > dspspvcifs

*********ALLOCATIONS BY INTERFACE**********
Cumulative connection count : VCs: 0000;  VPs: 0000

M8850_LA.1.AXSM.a >
```

dsptask

Display Task—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dsptask** command to display detailed information about a specific task from the task list.

Syntax

dsptask <*Task ID*> <*Level*>

Syntax Description

Task ID	Identifies the task you want to display. **Note** Enter the **dsptasks** command without any of the optional parameters to see the task IDs for all tasks on the current AXSM.
Level	Enables core or detailed information for the specified task. Enter a number to indicate the level of debugging for the channel as follows: • **0**—Generic task information. • **1**—core information • **2**—detailed information Enter a **0** to disable the debugging feature on the specified channel.

Related Commands

dsptasks

Attributes

Log: no	State: active/standby/init	Privilege: SERVICE_GP

Example

Display core information about the task with the ID *0x1000d*.

```
M8850_LA.2.AXSM.a > dsptask 0x1000d 1

  NAME        ENTRY       TID     PRI   STATUS      PC       SP     ERRNO  DELAY
---------- ------------ -------- --- ---------- -------- -------- ------- -----
tSarDisp   sar_rx_dispa 82afc0c0   8 PEND       806feda0 82afbe50       0     0

stack: base 0x82afc0c0  end 0x82af72a0  size 19984  high 1576   margin 18408

options: 0x4
VX_DEALLOC_STACK

$0     =               0    t0     =                0    s0     =         3400ff01
at     =               0    t1     =                0    s1     =                0
```

```
v0    =                0   t2    =                0   s2    =                0
v1    =                0   t3    =                0   s3    =         3400ff01
a0    =            1000d   t4    =                0   s4    =               11
a1    = ffffffff804e01f4   t5    =                0   s5    = ffffffff87544cf0
a2    =                0   t6    =                0   s6    = ffffffff81965b10
a3    =                0   t7    =                0   s7    =                0
s8    =                0   k0    =                0
gp    = ffffffff80b272a0   k1    =                0   t8    =                0
ra    =                0   sp    = ffffffff82afbe50   t9    =                0
divlo =           496240   divhi =                0   sr    = 3400ff00
pc    = 806feda0

SSI_TID             : 0x1000d
parent              : tRootTask
binary sem ID       : 0x0
msg queue chain     : NULL
initial task status : ERROR

suspend recv action : hard reset
starvation recv action    : hard reset

suspend recv tick   : 0
suspend count       : 0

starve rec tick     : 0
starve count        : 0

runaway count       : 0
runaway hwm count   : 0
runaway thresh      : 30000

starvation count    : 0
starvation hwm count: 0
starvation thresh   : 5

hang count          : 0
hang hwm count      : 0
hang Thresh         : 5

flags               : 0

M8850_LA.2.AXSM.a >
```

dsptasks

Display Tasks—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dsptasks** command to display the task list for the current AXSM.

Syntax

dsptasks

Syntax Description

None.

Related Commands

dsptask

Attributes

Log: no	State: active/standby/init	Privilege: SERVICE_GP

Example

Display the task list for the current AXSM.

```
M8850_LA.1.AXSM.a > dsptasks

    Name        SSI_TID     TASK_ID
-----------------------------------
tRootTask       0x1        0x82be7d60
tSarDisp        0x1000d    0x82b69390
tLOGD           0x1000e    0x82b56420
ctc             0x1000f    0x82b4f060
SRCV            0x10010    0x82b50340
tExcTask        0x10011    0x82bdddc0
tLogTask        0x10012    0x82bdb200
tDbgTrc         0x10013    0x82b586d0
tWdbTask        0x10014    0x82b70710
tNetTask        0x10015    0x82b98400
tSl0Wrt         0x10016    0x82b71190
tPortmapd       0x10017    0x82b7d4e0
IPC Ctl         0x10018    0x82b49cf0
tSyncRamDb      0x10019    0x82b44a40
CliCcRoot       0x1001a    0x82b3f970
tSmtermdTas     0x1001b    0x82b3d540
tCccInTsk       0x1001c    0x82b39230
tSyserrd        0x1001d    0x82b6e460
tCliIOtimer     0x1001e    0x82b6c1b0

Type <CR> to continue, Q<CR> to stop:

    Name        SSI_TID     TASK_ID
-----------------------------------
tCccCmdTsk      0x1001f    0x82b33da0
```

```
tCccOutTsk      0x10020    0x82b2eaf0
dbClnt          0x10021    0x82b2c840
FileAccSrv      0x10022    0x82b28590
HwMonitor       0x10023    0x82b242e0
rmonTask        0x10024    0x82b1ff40
StatFileMgr     0x10025    0x82b1bc90
emRoot          0x10026    0x82b179e0
CCMA_Task       0x10027    0x82b0f730
ilmiRat         0x10028    0x82b0b480
snmpAxsmRat     0x10029    0x82b091d0
lmiRootTask     0x1002a    0x82b06f20
TrapRat         0x1002b    0x82b04c70
CutRat          0x1002c    0x82afc9c0
CliRat          0x1002d    0x82afa710
diagOnln        0x1002e    0x82af8460
tCrdmpSlv       0x1002f    0x82af61b0
tEvtHndlrTa     0x10030    0x82af1de0
ilmiMain        0x10031    0x82ae4540

Type <CR> to continue, Q<CR> to stop:

    Name        SSI_TID     TASK_ID
-----------------------------------
trapClTask      0x10032    0x82adc1a0
cutSTask        0x10033    0x82ad7820
snmpSA          0x10034    0x82ad3450
ilmiPassup      0x10035    0x82acf110
camTask         0x10036    0x82ac6800
ilmiSync        0x10037    0x82ac2550
tDbgInTask      0x10038    0x82aba090
cutW1Task       0x10039    0x82ab1a00
QE48SARTask     0x1003a    0x82aab6e0
tVsiSlave       0x1003b    0x82aa7430
tVsiSync        0x1003c    0x82a9f180
tCproAlm        0x1003d    0x82a96cc0
tCpro           0x1003e    0x82a92a10
tConStat        0x1003f    0x82a8e760
tOamAr          0x10040    0x82a8a4b0
tOamCc          0x10041    0x82a86200
tOamLb          0x10042    0x82a81f50
tTelnetDTas     0x10043    0x82a7d940
cutW2Task       0x10044    0x82a79020

Type <CR> to continue, Q<CR> to stop:

    Name        SSI_TID     TASK_ID
-----------------------------------
cutW3Task       0x10045    0x82a74ce0
cutVTask        0x10046    0x82a708b0
lmiSyncRamT     0x10047    0x82a6c420
lmiIpConnTa     0x10048    0x82a68170
EMTask          0x10049    0x82a62da0
tEmFaultMgr     0x1004a    0x82a5eaf0
PhyTask         0x1004b    0x82a5a840
tEmRamSync      0x1004c    0x82a56470
APSTask         0x1004d    0x82a521c0
APS1P0          0x1004e    0x82a4de50
APS1P1          0x1004f    0x82a49ba0
APS1P2          0x10050    0x82a458f0
APS1P3          0x10051    0x82a41640
StatsTask       0x10052    0x82a3cfa0
tSmInTsk02      0x1007e    0x82a23fe0
tSmCmdTsk02     0x1007f    0x82a1fd30
tSmOutTsk02     0x10080    0x82a276d0
```

```
Free task entry : 126

M8850_LA.1.AXSM.a >
```

dsptotals

Display Totals—AXSM, AXSM-E, AXSM-XG

Displays line, port, and channel totals for the current card.

Syntax

dsptotals

Syntax Description

None.

Related Commands

None.

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display line, port, and channel totals for the current AXSM.

```
M8850_NY.1.AXSM.a > dsptotals
       total active lines = 4/4
       total active ports = 2/60
       total active chans = 0/130048

M8850_NY.1.AXSM.a >
```

dspudpdiagcstat

Display User Datagram Protocol Diagnostic Connection Statistics—AXSM, AXSM-XG

Use the **dspudpdiagcstat** command to display the User Datagram Protocol (UDP) diagnostic connection statistics for the specified interface (port).

Note The **dspudpdiagcstat** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspudpdiagcstat <*ifNo*> <*vpi*> <*vci*>

Syntax Description

Related Commands

dspudpdiagstat

Attributes

Log: no	State: active, standby	Privilege: GROUP1

Example

Display the UDP diagnostic connection statistics for port 21, VPI 0, VCI 0.

```
M8950_DC.1.AXSM.a > dspudpdiagcstat 21 0 0

Ingress:
EOF                : 738101
EFCI               : 0

Egress:
EOF                : 738107
EFCI               : 0

M8950_DC.1.AXSM.a >
```

dspudpdiagstat

Display User Datagram Protocol Diagnostic Statistics—AXSM

Use the **dspudpdiagstat** command to display the User Datagram Protocol (UDP) diagnostic statistics for the current AXSM.

Note The **dspudpdiagstat** command is an engineering command that is available only when the card is in engineering mode. To enable engineering mode on the current card, enter the **seteng on** command.

Syntax

dspudpdiagstat

Syntax Description

None.

Related Commands

dspudpdiagcstat

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Display the UDP diagnostic statistics for the current AXSM.

```
M8850_LA.1.AXSM.a > dspudpdiagstat
tx Target CellCount:
65535          0              0              0
0              0              0              0
65535          0              0              0
0              0              0              0
0              0              0              0
0              0              0              0
0              0              0              0
0              0              0              0
rx Port CellCount:
65535          65535          0              0
u2 Tx Port CellCount:
65535          65535          0              0
u3Tx CellCounter:65535
u3Rx CellCounter:65535
u3TxIntrf Count cellPe:0
u3TxIntrf Count misalign:0
u3TxIntrf Count qFull:0
u3TxIntrf Count disErrCnt:0
u3RxIntrf  Pe:0
u2 Tx Error Count:
0              0              0              0
```

```
Type <CR> to continue, Q<CR> to stop:
u2 Rx Error Count headerPe:
0              0              0              0
u2 Rx Error Count payloadPe:
0              0              0              0
u2 Rx Error Count syncErr:
0              0              0              0
u2 Rx Error Count discardErr:
0              0              0              0
u3Error Count:0

M8850_LA.1.AXSM.a >
```

dspversion

Display Version—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **dspversion** command displays details for the versions of boot and runtime firmware images residing on a card. Typically, you use the **dspversion** command in conjunction with the commands for changing a card's firmware version. (See "Related Commands" section below.) For example, you can enter the **dspversion** command to see if a particular firmware version is currently running.

Version Numbering Conventions

This section describes how to interpret the *version* number of a firmware image. Commands such as **loadrev** and **setrev** require a version number rather than a filename. Similarly, the **dspversion** command shows the firmware version number, rather than the firmware filename. Although the version number derives from the firmware filename, they are distinctly different.

Firmware Filenames

The FW directory on the hard drive contains firmware files for possibly many revisions. Each firmware file has the *fw* file extension. The format of a firmware filename follows:

cardtype_version-element[_platform].fw

Note that *platform* is an optional field because it applies only to the PXM45 card. For example, a firmware file may have the name "axsm_003.000.001.001.fw." Within this filename, the version-portion of the filename is 003.000.001.001. (Note the absence of "mgx" in the filename.) The version-portion of the filename has the following format:

major-release.minor-release.maintenance.patch

Using the example "axsm_003.000.001.001.fw," the version portion is 3.0(1.1). Similarly, if no patch is present in the firmware image, the version number would be 3.0(1).

The range for each *release*, *maintenance*, and *patch* is 0–255. Note, as you read left-to-right, that each element is a superset of the element on the right, and the number on the right resets to 0 or 1 when the element on its *left* is incremented. For example, if the *minor-release* number 010 rolls to 011, the *maintenance* on its right is reset to 1, so the new version in the example is "003.010.001.000." (Note the anomaly here is that the *maintenance* number resets to 1 rather than 0, due to the IOS convention of starting maintenance numbers at 1.)

Version Numbers

To derive the firmware version number, the firmware filename is altered by removing insignificant zeroes and reformatting the filename to include parentheses. The format of a *version* number follows:

major-release.minor-release(maintenance.patch)phase

For example, the significance of 3.0(60.8)P1 is shown below:

major-release	minor-release	(maintenance.patch)	phase
3.	0.	(60.8)	P1

Prerelease, developmental firmware versions have one or two alphanumeric characters at the end of the version number. These versions may appear in various contexts. For example, the Help display for a **setrev** command gives examples of *revision*, but only the first two items in the following bulleted list could be in the *released* product. These two items show major release 3, minor release 0, and the minimal maintenance number of 1 (per IOS precedent). The last three bulleted items show the developmental revision numbers:

- 3.0(1) (note the absence of a patch number)
- 3.0(1.248) (note that the patch number is 248)
- 3.0(0.1)A1 (note that the phase number is A1)
- 3.0(0.10)D2 (note that the phase number is D2)
- 3.0(0.248)P1; 3.0(0.1)P2; 3.0(0.113)P3; 3.0(0.10)P4

Syntax

dspversion

Syntax Description

None.

Related Commands

abortrev, **commitrev**, **loadrev**, **runrev**, **setrev**, **dspcd**

Attributes

log: no	State: active, standby, init	Privilege: ANYUSER

Example

Display details for boot and runtime firmware versions residing on the current AXSM.

```
M8850_LA.1.AXSM.a > dspversion

  Image Type   Shelf Type    Card Type         Version   Built On
  ----------   ----------   ----------    ------------   ------------
     Runtime          MGX         AXSM     4.9(23.17)A   Nov  6 2003, 14:14:34
        Boot          MGX         AXSM      4.9(23.3)A   -

M8850_LA.1.AXSM.a >
```

dspvsicon

Display VSI Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspvsicon** command to display information about the specified VSI connection on the current AXSM.

Syntax

dspvsicon <*ifNum*> <*vpi*> <*vci*> [*dbglvl*]

Syntax Description

ifNum	The logical port number, in the range from1 through 60.
vpi	The VPI has the range 0–255 for a UNI or 0–4095 for a UNI or VNNI.
vci	The VCI in the range 1–65535 for VCCs, or 0 for VPCs.
dbglvl	(Optional parameter) Indicates the extent of debugging information to be displayed: • 1 = Display summary information • 2 = Display summary information, plus table summary information • 3 = Display all debugging information, which includes the following: – Summary information – Table summary information – Detailed table summary information. The default is 1.

Related Commands

dspvsicons

Attributes

Log: no	State: active/ standby	Privilege: CISCO_GP

Example

Display summary information about the VSI connection on port 11, VPI 0, VCI 0.

```
M8850_LA.1.AXSM.a > dspvsicon 11 0 0 1
cRef  State    Type       lLin     lVpi lVci   rLin     rVpi rVci   cksmVal
--------------------------------------------------------------------------
00020 Cmtted   s/svc      0101180b 0000 000005 01073b22 0001 000035 d8101810

connInDb  chkSumBlkId
--------  -----------
YES       000000

Endpoint Info - Local
```

```
-------------
persistEp e2eTerm inhibitRx inhibitTx oamEp
--------- ------- --------- --------- -----
FALSE     FALSE   FALSE     FALSE     NONE
sendInactiveInd sendAlarmInd sendRmtAlarmInd
--------------- ------------ ---------------
ACTIVE          FALSE        FALSE

Endpoint Info - Remote
-------------
persistEp e2eTerm inhibitRx inhibitTx oamEp
--------- ------- --------- --------- -----
FALSE     FALSE   FALSE     FALSE     SEGMENT

Type <CR> to continue, Q<CR> to stop:
sendInactiveInd sendAlarmInd sendRmtAlarmInd
--------------- ------------ ---------------
ACTIVE          FALSE        FALSE

tcb_addr Last FSM Called    FSM rc   Usage Count
-------- ---------------    ------   -----------
00000000 VcoCm2sAkCp        000001   0002


M8850_LA.1.AXSM.a >
```

dspvsicons

Display VSI Connections—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspvsicons** command to display all VSI connections configured on the current AXSM.

Syntax

dspvsicons

Syntax Description

None.

Related Commands

dspvsicon

Attributes

Log: no	State: active/standby	Privilege: ANYUSER

Example

Display all VSI connections configured on the current AXSM.

```
M8850_LA.1.AXSM.a > dspvsicons
 LCN   Type     lLin     lVpi  lVci   rLin     rVpi  rVci  cksmVal  pCref
=========================================================================
00019 s/svc     0101180b 0000 000018 01073b22 0001 000036 d810190f 0000
00020 s/svc     0101180b 0000 000005 01073b22 0001 000035 d8101810 0000
65537 s/svc     01011815 0000 000018 01073b22 0001 000038 21e978f3 0000
65538 s/svc     01011815 0000 000005 01073b22 0001 000037 21e97cd0 0000
65545 s/svc     01011815 0011 000091 010c1801 0000 000038 2d822e93 0000
65540 s/svc     01011815 0011 000081 0106180d 0011 000100 01591873 0000
65547 p/svc     01011815 0011 000093 010c1801 0000 000040 3124185c 0000

M8850_LA.1.AXSM.a >
```

dspvsipart

Display VSI Partition—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspvsipart** command to display information about a specific VSI partition.

Syntax

dspvsipart <*partId*>

Syntax Description

partId	VSI partition identifier, in the range from 1 through 20.

Related Commands

dspvsiparts

Attributes

Log: no	State: active/standby	Privilege: ANYUSER

Example

Display partition information for VSI partition 1 on the current AXSM.

```
M8850_LA.1.AXSM.a > dspvsipart 1
----------------------------------------------------
        Checksum blocks for Partition: 0001
----------------------------------------------------
Idx    State         Val       numConn  numRsv  rsncTs
----------------------------------------------------
000   ALLOC      0x0000053c    0004    0000    0000
052   ALLOC      0x2d822e93    0001    0000    0000
072   ALLOC      0x01591873    0001    0000    0000
051   ALLOC      0x3124185c    0001    0000    0000
====================================================
Total:                         0007    0000    0000
====================================================

M8850_LA.1.AXSM.a >
```

dspvsiparts

Display VSI Partitions—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dspvsiparts** command to display information about all VSI partitions on the current AXSM.

Syntax

dspvsiparts

Syntax Description

None.

Related Commands

dspvsipart

Attributes

Log: no	State: active/standby	Privilege: ANYUSER

Example

Display information about all VSI partitions on the current AXSM.

```
M8850_LA.1.AXSM.a > dspvsiparts
-----------------------------------------
          Partition database
-----------------------------------------
Idx   partId   BlkInUse  BlkMax   numConn
-----------------------------------------
000    0001     0004      0083      0007
```

dumptrace

Dump Trace—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **dumptrace** command to save the AXSM trace information in a file on the PXM hard disk. Once you enter the **dumptrace** command, the switch generates a file and displays a message similar to the following example:

```
The trace is saved in file filename.log
```

In the above example, *filename*.log is the name of the trace file that has been saved in the PXM hard disk, in the directory C:LOG/<*slot number*>, where *slot number* is the number of the slot from which you entered the **dumptrace** command.

Use the following procedure to view the contents of the trace file:

1. Enter the **dumptrace** command to save the trace file to the PXM hard disk. Make a note the trace file name displayed by the switch when the file is saved.
2. Enter **cc** to change to the PXM card
3. Enter **cd "C:Log/**<*slot number*> to retrieve the trace file you saved in Step 1. Replace <*slot number*> with the number of the slot from which you entered the **dumptrace** command**.**

Syntax

dumptrace

Syntax Description

None

Related Commands

trace

Attributes

Log: no	State: active/standby	Privilege: SERVICE_GP

Example

Dump that trace files on the current AXSM.

```
M8850_LA.1.AXSM.a > dumptrace
The trace is saved in file error04.log
```

exit

Exit from User Session—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

Use **exit** to exit the current user session and log out. To start another session, you must log in by using telnet (for example).

Syntax

exit

Related Commands

bye, logout

Attributes

Log: yes	State: active, standby, init	Privilege: ANYUSER

Example

Exit from the current user session.

```
MGX8850.8.AXSM.a > exit

(session ended)
```

help (?)

Help—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

The **help** command lists the available commands on the card. You can use the question mark (**?**) in place of the word help to get the same results. The **help** command is case-sensitive.

You can use the **help** command or a question mark (**?**) as follows:

- Enter the **help** command with no parameters to display all the available commands on the card.
- Enter the **help** command with a character string as the parameter to display all commands that contain that character string.
- Enter the **help** command with the name of a command as the parameter to display whether that command is available.

The **help** command does not display commands with a privilege level that is higher than that of the current user.

If you can enter two parameter strings, **help** provides information for each of the two strings separately (not a single, two-part string).

Syntax

help [*string*]

or

? [*string*]

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

View all commands associated with a partial command entry string.

```
MGX8850.1.AXSM.a >? con

Available commands
------------------
ddcon
clrconcnt
cnfcon
delcon
delcons
dspcon
dspconcnt
dspcons
```

history

Command History—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

Use **history** to display the last 10 commands executed on the current card. To repeat a command with its parameters, type an exclamation mark followed by the associated number and no spaces.

Syntax

history

Syntax Description

No parameters

Related Commands

cmdhistory

Attributes

Log no	State: active, standby, init	Privilege: ANYUSER

Example

```
MGX8850.2.AXSM.s > history
Size of cmdHistory is currently 10 line(s)
  1 cc 2
  2 history
  3 ? del
  4 ? cnf
  5 history
```

insbiterror

Insert Bit Error—AXSM-E, AXSM-32-T1E1-E

Inserts single bit errors into the transmitted BERT pattern.

Syntax

insbiterror -ln <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

cnfbert, startbert, stopbert

Attributes

Log: yes	State: active	Privilege: GROUP1

logout

Log Out—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

Logs the user out of the current CLI session.

Syntax

logout

Syntax Description

No parameters

Related Commands

bye, exit

Attributes

Log: yes	State: active, standby, init	Privilege: ANYUSER

Example

Log out of the current CLI shell.

```
MGX8850.8.AXSM.a > logout

(session ended)

MGX8850.8.AXSM.a >
```

memShow

Show Memory—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **memshow** command to display the memory map for the current AXSM.

Syntax

memshow

Syntax Description

None.

Related Commands

ifShow

Attributes

Log: no	State: active/standby/init	Privilege: SERVICE_GP

Example

Text.

```
M8850_NY.1.AXSM.a > memshow
 status   bytes    blocks   avg block  max block
 ------ --------- -------- ---------- ----------
current
   free   8482752        1    8482752   8482752
  alloc   1864816     1191       1565        -
cumulative
  alloc  30842464    10128       3045        -
```

offdiagcstat

Off Diagnostic Connection Statistics—AXSM

Use the **offdiagcstat** command to disable diagnostic connection statistics collection on the current AXSM.

Syntax

offdiagcstat

Syntax Description

None

Related Commands

ondiagcstat

Attributes

Log: no	State: active/standby/init	Privilege: ANYUSER

Example

Disable offline diagnostic connection statistics collection on the current AXSM.

```
M8850_NY.1.AXSM.a > offdiagcstat

M8850_NY.1.AXSM.a >
```

offdiagstat

Off Diagnostics Statistics—AXSM

Halts the statistical diagnostic program that keeps count of how many times the diagnostics have run.

Syntax

offdiagstat

Syntax Description

No parameters

Related Commands

ondiagstat

Attributes

Log: yes	State: active	Privilege: SERVICE_GP

Example

```
MGX8850.10.AXSM.a > offdiagstat

Disabling diag stats, enabling bucket stats.
```

ondiagcstat

On Diagnostic Connection Statistics—AXSM

Use the **ondiagcstat** command to enable diagnostic connection statistics collection on the current AXSM.

Syntax

ondiagcstat

Syntax Description

offdiagcstat

Related Commands

offdiagcstat

Attributes

Log: no	State: active/standby/init	Privilege: ANYUSER

Example

Enable online diagnostic connection statistics collection on the current AXSM.

```
8850_NY.1.AXSM.a > ondiagcstat

M8850_NY.1.AXSM.a >
```

ondiagstat

On Diagnostics Statistics—AXSM

Starts running the diagnostics statistics program that keeps count of how many times diagnostics has run.

Syntax

ondiagstat

Syntax Description

No parameters

Related Commands

offdiagstat

Attributes

Log: yes	State: active	Privilege: SERVICE_GP

Example

```
MGX8850.10.AXSM.a > ondiagstat

Enabling diag stats, disabling bucket stats.
```

ping

Ping—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

Use **ping** to determine if a host is operational. The command causes the switch to send an ICMP packet to a destination address.

Syntax

ping <*IP_Addr*> [<*Num_Packets*>]

Syntax Description

IP_Addr	IP address of the destination host in dotted decimal format.
Num_Packets	Number of packets, in the range 0–65535. • 0 specifies an infinite number of packets • 3 is the default

Related Commands

None

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Ping IP address 172.29.23.148.

```
MGX8850.7.AXSM.a > ping 172.29.23.148
PING 172.29.23.148: 56 data bytes
64 bytes from 172.29.23.148: icmp_seq=0. time=0. ms
64 bytes from 172.29.23.148: icmp_seq=1. time=0. ms
64 bytes from 172.29.23.148: icmp_seq=2. time=0. ms
----172.29.23.148 PING Statistics----
3 packets transmitted, 3 packets received, 0% packet loss
round-trip (ms) min/avg/max = 0/0/0
```

reboot

reboot—AXSM-E, AXSM-XG

Reboots the card.

Syntax

reboot

Syntax Description

No parameters

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

```
MGX8850.5.AXSME.a > reboot
```

restartimagrp (rstrtimagrp)

Restart IMA Group—AXSM-32-T1E1-E

Restarts the IMA group at the near end, restarts all the internal IMA state machines, and causes the IMA group to attempt to re-establish the IMA protocol with the far end.

Syntax

restartimagrp <*group*>

or

rstrtimagrp <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.2

Related Commands

dspimagrp, dspimalnk

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.2.AXSME.a> restartimagrp 1.1
or
MGX8850.2.AXSME.a> rstrtimagrp 1.1
```

rrtcon

Re-route Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **rrtcon** command lets you trigger the immediate re-routing of a connection.

Syntax

rrtcon <*ifNum*> <*vpi*> <*vci*>

Syntax Description

ifNum	The logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI of the connection. For UNI, the range is 0–255. For NNI, the range is 0–4095.
vci	The VCI of the connection. • For a VCC, the VCI range is 1–65535. • For a VPC, the VCI is always 0.

Related Commands

dspcons, dspcon

Attributes

Log: yes	State: active	Privilege: GROUP1

Attributes

Log: yes	State: active	Privilege: SERICE_GP

Example

```
MGX8850.4.AXSME.a > rrtcon 1 255 65535

MGX8850.4.AXSME.a >
```

sesntimeout

Session Timeout—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **sesntimeout** command to extend the amount of idle time in a user-session from the default of 10 minutes. If you do not specify a timeout period, the system displays the current timeout. At the end of the session, the system logs you out.

To disable the session timeout function, specify 0 seconds.

Note The **timeout** command is the same as the **sesntimeout** command.

Syntax

sesntimeout [*timeout*]

Syntax Description

timeout	(optional) Number of idle time seconds allowed for the session.The maximum timeout is 12 hours(43200 seconds). You can enter **43200** or just **0** to set the timeout session to the maximum timeout.

Related Commands

None.

Attributes

Log: No	State: active/standby/init	Privilege: ANYUSER

Example

Set session timeout threshold to 12 minutes (720 seconds).

```
M8850_NY.1.AXSM.a > sesntimeout 720
The timeout period for this session is now set to 720 second(s)

M8850_NY.1.AXSM.a >
```

sesnwatchdog

Session Watchdog—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **sesnwatchdog** command sets the state of the session watchdog timer function to either ON of OFF.

This command provides a timeout function to handle very long response times to CLI commands during debugging operations. Accordingly, if the session watchdog timer is set to OFF, CLI debugging commands may take longer to execute to completion.

Syntax

sesnwatchdog [**on** | **off**]

Syntax Description

on	Default value. Indicates that session watchdog timer function is active.
off	Indicates that session watchdog timer function is not active.

Related Commands

None

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Set the state of the session watchdog timer function to OFF.

```
M8850_NY.1.AXSM.a > sesnwatchdog Off
Value of sesnWatchdog is currently OFF
```

Set the state of the session watchdog timer function to ON.

```
M8850_NY.1.AXSM.a > sesnwatchdog On
Value of sesnWatchdog is now turned ON
```

seteng

Set Engineering Mode—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Enables/disables the engineering mode on the current card. Enabling the engineering mode allows you to see the following debugging/engineering commands:

- **clidbxlevel**
- **dspatlasdiagcnfcstat**
- **dspatlasdiagcstat**
- **dspatlasdiagstatcnf**
- **dspatlaslndiagstat**
- **cnfatlaslndiagstat**
- **dspbucketcstat**
- **dspCproCnfg**
- **dspcprotbls**
- **dspudpdiagcstat**
- **dspudpdiagstat**

Syntax

seteng <*flag*>

Syntax Description

flag	Enter **on** to enable engineering mode on the current card, or enter **off** to disable engineering mode on the current card.

Related Commands

None.

Attributes

Log: yes	State: active, standby, init	Privilege: CISCO_GP

Example

Enable engineering mode on the current card.

```
M8950_DC.15.AXSMXG.a > seteng on

M8950_DC.15.AXSMXG.a >
```

setsctver

Set SCT Version—AXSM

The **setsctver** command lets you pre-set a new SCT for an AXSM card. The next time the card is reset, the switch loads the SCT specified with this command onto the card. You can use this command in conjunction with a graceful firmware upgrade. A graceful upgrade includes a card reset, and this card reset causes the SCT version specified by the **setsctver** command to load onto the card.

The commands for a graceful upgrade are **loadrev**, **runrev**, and **commitrev**. In conjunction with a graceful upgrade, you use the **setsctver** command before the **loadrev** command.

Syntax

setsctver <*sctVer*>

Syntax Description

sctVer	The number of the SCT has a range of 1–255.

Related Commands

delsct, **cnfsct**, **dspscts**, **addsct**, **addport**, **cnfport**, **dspport**, **cnfcdsct**, **dspportsct**, **dspcdsct**, **dspsct**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Set the SCT version to 20. The next time the card is reset, the switch will load SCT 20 onto that card.

```
M8850_NY.12.AXSM.a > setsctver 20

M8850_NY.12.AXSM.a >
```

sfmDBShow

Show Statistics Files Manager—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Enter the **sfmDBShow** command to display the contents of the statistics file manager on the current AXSM.

Syntax

sfmDBShow <*dbLevel*>

Syntax Description

dbLevel	Specifies the extent of statistics information to be displayed: • 1 = List all statistics files • 2 = List uploaded statistics files • 3 = SFMAPI-SFM-SUM IPC Msg statistics • 4 = List all Statistics files, uploaded statistics files, SFMAPI-SFM-SUM IPC Msg statistics, and Globals.

Related Commands

None.

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Display all statistics files (level 1) on the current AXSM.

```
M8850_NY.1.AXSM.a > sfmdbshow 1

--------------------------------------------------------------------------------
            STAT FILE MGR: Internal Information
--------------------------------------------------------------------------------

Ramdisk-"STAT:": Total num of stat files-20:

                 name|    state|    upCnt|        size|  sizeOnDisk|     cTicks|
                 -----    ------    ------        -----  -----------     -------
 1-01-Con-012320040700        1         0          158          512   11765000
 1-01-Con-012320040715        1         0          158          512   11855006
 1-01-Gen-012320040715        1         0         1578         1024   11855042
 1-01-Gen-012320040730        1         0         1578         1024   11944987
 1-01-Con-012320040730        1         0          158          512   11945015
 1-01-Con-012320040745        1         0          158          512   12035024
 1-01-Gen-012320040745        1         0         1578         1024   12035032
 1-01-Gen-012320040800        1         0         1578         1024   12124977
 1-01-Con-012320040800        1         0          158          512   12125033
```

```
 1-01-Gen-012320040815        1        0         1578         1024   12215022
 1-01-Con-012320040815        1        0          158          512   12215042
 1-01-Con-012320040830        1        0          158          512   12305051
 1-01-Gen-012320040830        1        0         1578         1024   12305068
 1-01-Gen-012320040845        1        0         1578         1024   12395014
 1-01-Con-012320040845        1        0          158          512   12395060
 1-01-Con-012320040900        1        0          158          512   12485069
 1-01-Gen-012320040900        1        0         1578         1024   12485159
 1-01-Gen-012320040915        1        0         1578         1024   12575104
 1-01-Gen-012320040930        1        0         1578         1024   12665149
 1-01-Gen-012320040945        1        0         1578         1024   12755094
-------------------------------------------------------------------------------

M8850_NY.1.AXSM.a >
```

shellConn

Enter into shellConn mode —AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Enter the **shellConn** command to enter the shellConn mode for the current card.

Syntax

shellConn

Syntax Description

None.

Related Commands

None

Attributes

Log: yes	State: active, standby, init	Privilege: CISCO_GP

Example

Enter into shellConn mode for the AXSM in slot 5.

```
M8850_NY.5.AXSM.a > shellConn
```

showsyserr

Show System Errors—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **showsyserr** command to set the state of the system error function to either ON of OFF.

Note Enter the **showSyserr** command without parameters to display the current status of the system error feature (whether it is *on* or *off*).

Syntax

showsyserr [**on** | **off**]

Syntax Description

on | **off**	Enables and disables the showSyserr feature. Enter **on** to enable the showSyserr feature. Enter **off** to disable the showSyserr feature.

Related Commands

None.

Attributes

Log: no	State: active/standby/init	Privilege: ANYUSER

Example

Show the current status of the **showSyserr** feature.

```
M8850_NY.1.AXSM.a > showsyserr
Value of showSyserr is currently OFF
```

Enable the **showSyserr** feature.

```
M8850_NY.1.AXSM.a > showsyserr on
Value of showSyserr is now turned ON

M8850_NY.1.AXSM.a >
```

smclrscrn

Service Module Clear Screen—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **smclrscrn** command to enable or disable at the node level certain clear-screen commands on AXSM cards.

To see the current enable state, enter **smclrscrn** with no parameters.

Syntax

smclrscrn [enable | disable]

Syntax Description

enable | disable	Type **enable** to enable the clear screen commands on the AXSM, or type or **disable** to disable the clear screen commands on the AXSM. Default: disabled

Related Commands

clrscrn

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Enable clear screen commands on the current AXSM.

```
M8850_LA.1.AXSM.a > smclrscrn enable
Value of smClrscrn is now enabled

M8850_LA.1.AXSM.a >
```

startbert

Start Bit Error Rate Test—AXSM-E, AXSM-32-T1E1-E

Starts running a bit error rate test on the given line.

Syntax

startbert <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

cnfbert, stopbert

Attributes

Log: yes	State: active	Privilege: GROUP1

startimalnktst

Start IMA Link Test—AXSM-32-T1E1-E

Starts an IMA link connectivity test on a specified *link* in a specified IMA *group*. You can check that an IMA link connection is valid by sending a *test pattern* to the *link*. The test pattern is a number in the range of 0–254. If the test pattern number is the same when it arrives at the receive endpoint of the link, then the link is valid. If the test pattern number is different or does not arrive at all, then the link is invalid. You can run only one test at a time.

Syntax

startimalnktst <*group*> <*link*> <*test Pattern*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16
link	The bay number (1–2) and the IMA link number (1–16) in the format *bay.link*. For example: 1.16
test Pattern	The test pattern number. Range: 0–254. If no value is entered, -1 is the default, which causes the program to select a pattern.

Related Commands

stopimalnktst, cnfimalnktst

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Start IMA link test on bay 1, group 1, link 2, using test pattern 1:

```
MGX8850.2.AXSME.a> startimalnktst 1.1 2 1
```

stopbert

Stop Bit Error Rate Test—AXSM-E, AXSM-32-T1E1-E

Stops running the bit error rate test on the given line.

Syntax

stopbert <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card.

Related Commands

cnfbert, startbertL

Attributes

Log: yes	State: active	Privilege: GROUP1

stopimalnktst

Stop IMA Link Test—AXSM-32-T1E1-E

Stops the IMA link test that was started using the **startimalnktst** command.

Syntax

stopimalnktst <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

startimalnktst, cnfimalnktst

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Stop the IMA link test on bay 1, group 1:

```
MGX8850.2.AXSME.a> stopimalnktst 1.1
```

switchapsln

Switch APS Line—AXSM, AXSM-E, AXSM-XG

Switches the specified working APS line (*bay, line*) to its protection line.

See the description for the **addapsln** command for a detailed explanation of Automatic Protection Switching (APS).

Syntax

switchapsln <*bay*> <*line*> <*switchOption*> [<*serviceSwitch*>]

Syntax Description

bay	The working bay number to switch.
line	The working line number to switch.
switchOption	The method of performing the switch. 1 = clear (returns to working line) 2 = lockout of protection (locks out the specified APS pair from being switched to protection line) 3 = forced working->protection (forces a working line to protection line switch unless the protection line is locked out) 4 = forced protection->working (forces a protection line to working line switch; 1+1 architecture mode only) 5 = manual working->protection (manual switch) 6 = manual protection->working (manual switch; 1+1 architecture mode only)
service switch	When set to 1, this field causes all APS lines to switch.

Related Commands

addapsln, cnfapsln, delapsln, dspapsln, dspapslns, dspapsbkplane, clrbecnt, dspbecnt

Attributes

Log: no	State: active	Privilege: GROUP1

Example

```
MGX8850.9.AXSM.a > switchapsln 1.1.1 3 1
Forced line switch from working to protection succeeded on line 1.1.1
```

syserr

Show System Errors—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **syserr** command to enable or disable node level system error commands on the AXSM card.

To see the current enable state, enter **syserr** with no parameters.

Syntax

syserr [**on** | **off**]

Syntax Description

on | **off**	Enable/disables the syserr feature. Enter **on** to enable the syserr feature. Enter **off** to disable syserr feature.

Related Commands

None

Attributes

Log: no	State: active/standby/init	Privilege: SERVICE_GP

Example

Display whether the system error function is enabled or disabled:

```
spirita.1.axsm.a > syserr

Value of showSyserr is currently OFF

Enable the showSyserr feature:
spirita.1.axsm.a > syserr on

Value of showSyserr is now turned ON


Disable the showSyserr feature:
spirita.1.axsm.a > syserr off

Value of showSyserr is now turned OFF
```

timeout

Timeout—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **timeout** command lets you extend the amount of idle time in a user-session from the default of 10 minutes. If you do not specify a timeout period, the system displays the current timeout. At the end of the session, the system logs you out.

To disable the session timeout function, specify 0 seconds.

Note The **timeout** command is the same as the **sesntimeout** command.

Syntax

timeout [*time_out*]

Syntax Description

time_out	Number of idle seconds allowed for the session.

Related Commands

sesntimeout

Attributes

Log: no	State: active, standby, init	Privilege: ANYUSER

Example

Display the current timeout.

```
MGX8850.5.AXSM.a > timeout
The timeout period for this session is currently 600 second(s)
MGX8850.5.AXSM.a >
```

Set the session timeout threshold to 100 minutes (6000 seconds).

```
MGX8850.5.AXSM.a > timeout 6000
The timeout period for this session is now set to 5000 second(s)
MGX8850.5.AXSM.a >
```

trace

Trace—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **trace** command to display the current status of the trace feature.

Syntax

trace

Syntax Description

None.

Related Commands

dumptrace

Attributes

Log: no	State: active, standby	Privilege: GROUP1

Example

Show the current status of the trace feature.

```
M8850_LA.1.AXSM.a > trace
Usage1   :   Trace  off
Usage2   :   Trace  normal
Usage3   :   Trace  mod <Mod Obj> <Level> <Flags>
Usage4   :   Trace  task <TaskName> <On/Off/Print>
Usage5   :   Trace  start
Usage6   :   Trace  status
Usage7   :   Trace  dump
Usage8   :   Trace  header <On>/<Off>

M8850_LA.1.AXSM.a >
```

tstconseg

Test Connection Segment—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Test the integrity of an SVC or SPVC. With **tstconseg**, a single collection of supervisory cells is sent in the *egress* direction between the card and service equipment (CPE). (See **tstdelay** for *ingress* direction.)

When the test successfully starts, the system displays a message stating that the test has begun and directs you to use either **dspcon** or **dspchantests** to see the results. The **dspcon** command shows detailed information about the connection and has a field for the results of this test. The **dspchantests** command display only the results of the test.

Note The **dspcon** fields on the AXSM for round trip delay—including the status of OAM loopback—always show the results of the latest test and are not changed until a new execution of **tstconseg** or **tstdelay**. Therefore, re-executing **dspcon** does not clear the value for RTD or the indication that an OAM loopback is present. The only way to reset these fields to null is to down the port (through **dnport**).

Syntax

tstconseg <*ifNum*> <*vpi*> <*vci*> [**-num** <*iterations*>]

Syntax Description

ifNum	The logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	The VPI range for the SVC or SPVC is 1–255.
vci	The VCI range for the SVC is 1–65535.
-num	(Optional) Specifies the number of times a collection of supervisory cells should traverse the SVC for the current execution of **tstconseg**.

Related Commands

dspcon, **tstdelay**, **dspchantests**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Test the integrity of 1 10 1000 in the egress direction.

```
M8850_LA.3.AXSM.a > tstcon 2 103 103 -num 2
tstconseg is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
02.0103.00103:    OAM Lpbk     egress      Success        2616 microsec
```

```
tstconseg is in progress ..
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
02.0103.00103:    OAM Lpbk     egress      Success        2624 microsec
```

tstdelay

Test Delay—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Test the integrity of the connection in the ingress direction by sending a collection of supervisory cells to the remote end of the network and back. (See **tstconseg** for the egress direction.) The **tstdelay** command applies to only SPVCs.

If the test successfully begins, the display states the fact and directs you to use the **dspcon** or **dspchantests** command to view the round trip time in microseconds. The **dspcon** display shows detailed information on the connection and has a field for the test results. The **dspchantests** display shows the results of only the round trip delay test.

Note The **dspcon** fields on the AXSM for round trip delay—including the status of OAM loopback—always show the results of the latest test and are not changed until a new execution of **tstconseg** or **tstdelay**. Therefore, re-executing **dspcon** does not clear the value for RTD or the indication that an OAM loopback is present. The only way to reset these fields to null is to down the port (through **dnport**).

Note The primary purpose of **tstdelay** is to test the integrity of the connection. The round trip time is not accurate enough for any use that requires an accurate measurement of delay.

Syntax

tstdelay <*ifNum*> <*vpi*> <*vci*> [**-num** <*iterations*>]

Syntax Description

ifNum	The logical port number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	Virtual path identifier. On the AXSM, the range is 1–255.
vci	Virtual connection identifier. On the AXSM, the range is 1–65535 for a VCC. For a VPC, the *vci* is 0.
-num	(Optional) Specifies the number of times a collection of supervisory cells should traverse the SVC for the current execution of **tstdelay**.

Related Commands

dspcons, **tstconseg**, **dspcon**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

On the AXSM slot, get the round-trip delay for connection 1 10 100. This example contains four command executions to illustrate how to obtain a list of logical ports; obtain a connection number; start the test; and view the results. the commands are **dspports**, **dspcons**, **tstdelay**, and **dspcon**. This procedure is valid for AXSM, AXSM-E, and AXSM-XG.

Step 1 Identify the logical ports on the card by executing dspports. For this example, the logical port (ifNum in the display) is 1.

```
MGX8850.1.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum     Port SCT Id     ifType  VPI
           State State Rate       Rate                               (VNNI only)
----- ---- ----- ----- ---------- --------- ----------------- ------ ----------
    1  1.1    Up    Up    1412831   1412831   6                  UNI    0
```

Step 2 Get the connection ID to provide to **tstdelay**. The connection identifier appears in NSAP format. In this example, assume **tstdelay** execution occurs at the slave end of the SPVC. Take the significant digits from the Identifier (01.0010.00100) to get the logical port, VPI, and VCI for **tstdelay**. These values are 1, 10, and 100.

```
MGX8850.1.AXSM.a > dspcons
record    Identifier   Type   SrvcType   M/S    Upld    Alarm
------    ----------   ----   --------   ---    ----    -----
    0  01.0010.00100   VCC        ubr1   S    0000ebfb      none
    1  01.0011.00101   VCC        ubr1   M    0000ec27      none
```

Step 3 Execute **tstdelay** for logical port 1, vpi 10, vci 100. The system response shows that the command started correctly and directs you to use **dspcon** or **dspchantests** to see the results.

```
MGX8850.1.AXSM.a > tstdelay 1 10 100
Test started; Use dspcon/dspchantests to see test results
```

Step 4 Execute **dspchantests** to see the results as displayed by this command. The units of measure for the round trip delay is microseconds.

```
MGX8850.1.AXSM.a > dspchantests 1 10 100
Connection Id    Test Type    Direction    Result     Round Trip Delay
=============    =========    =========    =======    ================
01.0010.00100:    OAM Lpbk     ingress     Success          30000
```

Step 5 Execute **dspcon** to see the results as displayed by this command. The line with test results appears towards the end of the display and begins with Loopback Type. The Direction field shows ingress, indicating the **tstdelay** command produced these results. (If **tstconseg** had been the last test command, this field would say egress.) The RTD (round trip delay) field shows 30000 microseconds.

```
MGX8850.1.AXSM.a > dspcon 1 10 100
--------------------------------------------------------------------------
Local   :                NSAP  Address              port     vpi    vci
(S)       47009181000000000001A53C82D00000101180100  1.01.01     10     100
Remote  :                NSAP  Address              port     vpi    vci
(M)       47009181000000000001A53C82D00000101180100  1.01.01     11     101
--------------------------------------------------------------------------
Conn. Type    :     VCC                          Admn Status  : ADMN-UP
Service Type  :    ubr1                          Rtng Status  : -67372037
Controller    :       2
--------------------------------------------------------------------------
Local PCR     :      14                          Remote PCR   :      14
Local SCR     :       3                          Remote SCR   :       3
Local CDV     :      -1                          Remote CDV   :      -1
Local CTD     :      -1                          Remote CTD   :      -1
Local MBS     :       1                          Remote MBS   :       1
```

```
Local CDVT    :      -1                          Remote CDVT  :      -1
Admin weight  :      -1                          Frame discard:       N
-------------------------------------------------------------------------
OAM CC Config : DISABLED                         Statistics   : DISABLED
-------------------------------------------------------------------------
Loopback Type : OAM Lpbk | Dir: ingress | Status: Success | RTD:   30000 us
-------------------------------------------------------------------------

-------------------------------------------------------------------------
Port side Tx  :  normal                          Swth side Tx :  normal
Port side Rx  :  normal                          Swth side Rx :  normal
-------------------------------------------------------------------------
I-AIS/RDI   E-AIS/RDI   CONDITIONED    CCFAIL       IfFail      Mismatch
   NO          NO           NO           NO           NO           NO
-------------------------------------------------------------------------
```

upallports

Up All Ports—activates all ports—AXSM

The **upallports** command primarily applies to the ports that were downed by the **dnallports** command.

Syntax

upallports

Syntax Description

No parameters

Related Commands

dnallports

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Check the current state of the logical ports. Down all ports. Up all ports. Re-check the state of the ports.

```
MGX8850.1.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum     Port SCT Id     ifType  VPI
           State State Rate       Rate                                (VNNI only)
----- ---- ----- ----- ---------- --------- ----------------- ------ ----------
    1  2.1    Up    Up    1412830   1412830   5                   NNI    0
    2  1.2    Up    Up    1412830   1412830   2                   UNI    0
    3  1.1    Up    Up    1412830   1412830   5                   NNI    0
    4  2.2    Up    Up      10000     10000   2                   UNI    0

MGX8850.1.AXSM.a > dnallports
dnport/dnallports can disrupt traffic on existing connections.
Use this command only to modify partition parameters or change SCT
Do you want to proceed (Yes/No) ? y
WARNING: port is configured as clock source

MGX8850.1.AXSM.a > dspports
ifNum Line Admin Oper. Guaranteed Maximum     Port SCT Id     ifType  VPI
           State State Rate       Rate                                (VNNI only)
----- ---- ----- ----- ---------- --------- ----------------- ------ ----------
    1  2.1  Down  Down    1412830   1412830   5                   NNI    0
    2  1.2  Down  Down    1412830   1412830   2                   UNI    0
    3  1.1  Down  Down    1412830   1412830   5                   NNI    0
    4  2.2  Down  Down      10000     10000   2                   UNI    0

MGX8850.1.AXSM.a > upallports
Writing secondary clock, dc=1, line=0
Secondary clock turned on

MGX8850.1.AXSM.a >
```

upcon

Up Connection—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Activate a connection that was previously brought down by the **dncon** command. (The typical purpose of **dncon** is some form of operational modification or troubleshooting.)

Syntax

upcon <*ifNum* > <*vpi*> <*vci*>

Syntax Description

ifNum	Logical interface (or port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
vpi	Virtual path identifier. On the AXSM, the range is 0–255.
vci	Virtual connection identifier. On the AXSM, the range is 1–65535 for a VCC. For a VPC, the only *vci* is 0.

Related Commands

dncon

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Activate the connection on port 2, VPI 30, VCI 300.

```
MGX8850.11.AXSME.a > upcon 2 30 300
```

upcons

Up Connections—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use the **upcons** command to bring up all connections associated with the specified interface (port), VPI, and VCI.

Syntax

upcons <*ifNum*> <*vpi*> <*vci*> [**-num** <*num. of conns to up*>] [-**verbose** <**1** | **0**>]

Syntax Description

ifNum	The logical port number, in the range from1 through 60
vpi	The VPI has the range 0–255 for a UNI or 0–4095 for a UNI or VNNI.
vci	The VCI in the range 1–65535.
-num	Number of consecutive connections to bring up.
-verbose	(Optional). This keyword enables (**1**) or disables (**0**) verbose mode. In verbose mode, the system immediately displays the connection identifier of each connection after the connection is deleted. The default is disabled.

Related Commands

dncon, dncons, dspcon, dspcons, upcon

Attributes

Log: yes	State: active	Privilege: CISCO_GP

Example

Activate all connections associated with port 2, VPI 30, VCI 300.

```
MGX8850.11.AXSME.a > upcons 2 30 300
Warning : upcons command is not recommended to be used on a production node...
Do you want to proceed (Yes/No)? y

MGX8850.11.AXSME.a >
```

upilmi

Up ILMI—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Use **upilmi** to activate interim local management interface (ILMI) for a particular resource partition on a logical port. Before executing **upilmi** for the partition, you must:

1. Activate a line through the **upln** command and configure the line through **cnfln**
2. Create a logical port through the **addport** command
3. Add resource partitions through **addrscprtn**

After activating ILMI, you can configure ILMI though the **cnfilmi** command.

Syntax

upilmi <*ifNum*> <*partId*>

Syntax Description

ifNum	The logical interface (or AXSM port) number. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126
partId	The ranges for partition identifier are as follows: • AXSM: 1–5 • AXSM-E, AXSM-XG: 1–20

Related Commands

cnfilmi, **dspilmi**

Attributes

Log: yes	State: active, standby	Privilege: GROUP1

Example

```
M8950_DC.14.AXSM.a > upilmi 21 1
Warning: connections (if any) on port could get rerouted.
Do you want to proceed (Yes/No) ? y
```

upimagrp

Up IMA Group—AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Enables the specified IMA *group* for active service.

Syntax

upimagrp <*group*>

Syntax Description

group	The bay number (1–2) and the IMA group number (1–16) in the format *bay.group*. For example: 1.16

Related Commands

addimagrp, delimagrp, dspimagrp

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8850.2.AXSME.a> upimagrp 1.1

MGX8850.2.AXSME.a>
```

uplmi

Up Local Management Interface—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

Activates the Local Management Interface (LMI) on the specified logical port (*ifNum*).

Syntax

uplmi <*ifNum*>

Syntax Description

ifNum	The interface number of the logical port on which to activate the LMI.

Related Commands

dnlmi

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Up LMI on logical interface 2.

```
MGX8850.1.AXSM.a > uplmi 2
```

upln

Up Line—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

The **upln** command activates a line on an AXSM.

After you have activated the line, use **cnfln** to configure the line characteristics such as the type of line (SONET, T3, or E3), line signaling, and so on.

Note See the **cnfcdsct** description for important planning considerations before you use **upln**.

Syntax

upln <*bay.line*>

Syntax Description

bay.line	Identifies the bay (1 or 2) and the line number. The line number is from 1 to the highest numbered line on the back card. Range: For OC12: 1 For OC3: 1–4 T3, E3: 1–8

Related Commands

dspln, **dsplns**, **cnfln**, **dnln**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Activate line 1 in bay 1.

```
MGX8850.1.AXSM.a > upln 1.1
```

uppath

Up Path—AXSM-XG

Activates the specified path (*path_num*).

Syntax

uppath <*path_num*>

Syntax Description

path_num	Identifies the path you want to bring up. **Note** If you do not know the *path_num,* enter the **dsppaths** command to see a list of all path numbers on the current card.

Related Commands

dnpath

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

```
MGX8950.3.AXSMXG.a > uppath 1.1.2
```

upport

Up Port—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **upport** command returns a logical port to the up state (or ups the port) so the port can again carry traffic. The **upport** command concludes possible re-configuration or troubleshooting steps. Before you execute **upport**, you must have downed the port by executing **dnport**. Throughout the sequence of downing and upping a port, the configuration for the port remains intact whether the logical port is a UNI or an NNI.

The routes for connections vary by interface type:

- After you re-enable an NNI port through **upport**, you cannot return the re-routed connections to the upped port.
- On a UNI, the connections continue to exist but remain in the failed state until you enable the port by executing **upport**.

Syntax

upport <*ifNum*>

Syntax Description

ifNum	A logical port (interface) number. Only one logical port is allowed if the line operates as a UNI or NNI. For the virtual network to network interface (VNNI), multiple ports can exist on a line. The ranges are: • AXSM: 1–60 • AXSM-E: 1–32 • AXSM-XG: 1–126 Use **dspports** or **dspport** as needed to determine which port to bring up.

Related Commands

dspport, **dspports**, **dnport**

Attributes

Log: yes	State: active	Privilege: GROUP1

Example

Restore port 1 on the current card to operation.

```
MGX8850.1.AXSM.a > upport 1
```

users

Users—AXSM, AXSM-E, AXSM-32-T1E1-E, AXSM-XG

The **users** command displays the following information about user sessions that are currently running:

- Access method and port (telnet session to the AXSM, for example)
- Current card slot
- Idle time for the user session (can depend on the **sesntimeout** command)
- User-name (the login name)
- Point from which the user gained access (for example, an IP address in the case of a telnet session or the word "console" if the user logged in through a local terminal at the console port)

Note that **users** shows the current user sessions, whereas the **dspusers** command shows the names of all the user accounts on the switch.

Syntax

users

Syntax Description

No Parameters

Related Commands

dspusers, **adduser**, **cnfuser**, **timeout**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display the current users on the AXSM.

```
MGX8850.10.AXSM.a > users

    Port         Slot      Idle       UserId       From
    -------------------------------------------------------------
    telnet.01     10     0:00:00     cisco        0.0.0.0
    smterm.03 *   10     0:00:00     davids4      slot 7
```

who

Who—AXSM, AXSM-E, AXSM-XG, AXSM-32-T1E1-E

Use **who** to see details about the user currently logged into a card. The information consists of the:

- Type of port where you logged into the card
- Slot number of the current card
- Idle time in hours, minutes, and seconds
- Current username
- IP address of the device that accessed the card (not the IP address of the card or node)

Syntax

who

Syntax Description

No parameters

Related Commands

adduser, **deluser**, **whoami**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display information about the user currently logged into the card.

```
MGX8850.5.AXSM.a > who

Port        Slot      Idle       UserId       From
-------------------------------------------------------------
telnet.01 *    5     0:00:00     admin 171.71.25.240
```

whoami

Who Am I—AXSM

Displays the current logged in user, user ID, access level, and port.

Syntax

whoami

Syntax Description

No parameters

Related Commands

adduser, **deluser**, **who**

Attributes

Log: no	State: active, standby	Privilege: ANYUSER

Example

Display information about the user of the current terminal session.

```
MGX8850.5.AXSM.a > whoami

User ID:        cisco
Access Level:   CISCO_GP
Terminal Port:  telnet.01

MGX8850.5.AXSM.a >
```

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